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ASBESTOS IN ONTARIO
DRINKING WATER SUPPLIES

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ASBESTOS IN ONTARIO DRINKING WATER SUPPLIES

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The magnitude of this project prohibits the acknowledgement of all persons involved. Personnel from virtually all municipalities and MOE Regional Offices in Ontario have been active in some aspect of the data collection stage. Ontario Ministry of the Environment Laboratory Services Branch conducted the sample analyses and participated in the data set-up. Water Resources Branch staff coordinated the program and prepared this document.

SUMMARY AND CONCLUSIONS

1) Low levels of asbestos have been found in drinking water in many parts of the world. The sources of asbestos fibers are numerous and often difficult to isolate, whether natural or as a result of man's activities.

2) Although sampling and analytical techniques for estimation of asbestos fiber concentration have improved significantly since the early 1970's, analysis remains expensive and results are highly variable.

3) Epidemiological and research studies have not consistently concluded that ingestion of asbestos fibers is detrimental to human health. However, the US EPA has proposed a Recommended Maximum Contaminant Level (RMCL) for asbestos fibers longer than 10 um, of 7.1 million fibers liter^{-1}(MFL). The 1987 Guidelines for Canadian Drinking Water Quality states that the assessment of available data indicates no need to set quantitative guidelines.

4) In this survey of 368 municipal water supplies, detectable levels of asbestos were found in approximately ten percent of samples analysed. Approximately one percent of the samples exhibited asbestos levels greater than 7.1 MFL. Of all the water supplies surveyed, three exhibited asbestos fiber concentrations exceeding 7.1 MFL in treated water. The reported concentrations were for fibers of all lengths; none of these locations had long (>10 um) fiber concentrations exceeding 7.1 MFL. Statistical analysis of fiber size from all three locations indicated that the probability of encountering fibers longer than 10 um was less than 0.01 percent. The estimated mean fiber length (99 percent confidence) did not exceed 3.16 um for any of these locations.

5) Results of this survey support work by other investigators, which indicates that conventional water treatment (coagulation / flocculation / sedimentation / filtration), when operating under optimal conditions, is capable of reducing asbestos concentrations to below detection limits.

6) Municipal water supplies that do not undergo conventional treatment are more likely to contain detectable levels of asbestos. None of the three water supplies surveyed that exceeded 7.1 MFL asbestos received conventional water purification.

7) Consistent with other surveys in Ontario, chrysotile asbestos was more commonly detected at higher concentrations than the amphibole fiber type during this study. Individual chrysotile fibers tend to be shorter than amphibole fibers, therefore, the probability of occurrence of high concentrations of long fibers (> 10 um) in Ontario drinking water would be expected to be low.

INTRODUCTION

This report consists of two parts; the first section provides an overview of asbestos in drinking water. Part II of this report presents the results of an Ontario-wide asbestos survey of 368 municipal drinking water supplies conducted between 1977 and 1983.

The term asbestos refers to a large group of naturally-occurring fibrous inorganic silicates. Asbestos fibers are generally categorized according to morphological characteristics into two sub-groups, namely chrysotile and amphibole.

Chrysotile fibers are cylindrical in shape and tend to be extremely fine; individual fibers may be as small as 0.01 um in diameter. Amphibole fibers are generally longer and have a greater cross-sectional area than the chrysotile type (Commins, 1979). Chrysotile fibers are the most common type found in water supplies, although the specific source will dictate relative abundance and fiber size characteristics (Millette et al, 1980; Toft et al, 1981).

PART I BACKGROUND : ASBESTOS IN DRINKING WATER SUPPLIES

Asbestos fibers have been found regularly in municipal water supply systems and in surface and ground water throughout Canada. In a study reported by Toft et al (1981) approximately five percent of 71 Canadian municipal water supplies were found to have levels of asbestos in excess of 10 million fibers liter^{-1} (MFL). This study surveyed water supplies used by approximately 55 percent of the Canadian population. Kay (1974) found asbestos levels as high as 3.87 MFL while examining asbestos trends in 21 Ontario cities.

The occurrence of asbestos fibers in drinking water supplies is not unique to Canada as detectable levels have frequently been reported in the USA, USSR, South Africa (Commins, 1979) and in Europe (Shugar, 1979). A survey of 47 States including Puerto Rico and the District of Columbia revealed that 45.8 percent of the water supplies monitored contained more than 1.0 MFL asbestos (Millette et al, 1980).

SOURCES OF ASBESTOS IN WATER

The sources of asbestos fibers in water are numerous. Runoff exposed to natural asbestos formations or old mine tailings may contain significant concentrations of asbestos (Commins, 1979). During a study of 22 Quebec municipalities the water supply systems of two asbestos mining communities exhibited concentrations greater than 200 MFL (Wigle 1977 in: Toft and Meek,1983).

Industrial waste effluents may also contain asbestos fibers. Waste discharged into Lake Superior from an iron ore processing plant in Minnesota resulted in concentrations of 600 MFL in Duluth drinking water (Millette et al, 1980). High levels of asbestos fibers were found in lake-bottom sediments a distance of 200 miles from the point of discharge (IJC, 1975).

Asbestos has been used extensively in the building industry for insulation, tiling, filters, adhesives, asbestos-cement pipe and in the automotive industry for brake linings and clutch pads. Lee and Selikoff (1979) provide an overview of the historical development of the asbestos industry. The ultimate fate of asbestos released into the atmosphere is, like many other airborne contaminants, surface water.

WATER CORROSIVENESS AND ASBESTOS-CEMENT PIPE

The contribution of asbestos to drinking water from asbestos-cement (AC) pipe is difficult to assess. Asbestos is used to complement the strength of cement in the fabrication of AC pipe, which is widely used in the distribution of municipal waters. Soft or corrosive waters may have a tendency to dissolve the cement matrix of AC pipe, allowing fibers to be released into the water supply (Davis et al, 1979; Toft et al, 1981). Hard or non-corrosive waters are less likely to dissolve cement and subsequently do not tend to cause the release of asbestos fibers (AWWA, 1974; Commins, 1979; Welch, 1981).

In order to quantify the degree of corrosiveness of water, a number of indices have been developed. Singley (1981) observes that the Langelier Index, essentially a comparison of the observed pH with the calculated pH at calcium carbonate saturation, may provide an indication of the tendency of water to be corrosive but fails to reflect the degree of corrosiveness. This index may be used to determine the probability of the formation of a calcium carbonate coating on the inner surfaces of pipe or other exposed materials. Such a coating tends to aid in resistance to corrosion (Energy & Environmental Analysis Inc., 1979). Calculation of a negative Langelier Index value corresponds with a tendency for water to be corrosive, while a positive value suggests that deposition of scale may occur.

The ASTM - C500 Aggressiveness Index (AI) is another measure of the corrosion potential of water. This method addresses the pH, alkalinity and hardness of a water supply. Generally, water having an AI less than 10 is said to be aggressive and when the AI is estimated to be between 10 and 12 the water is designated moderately aggressive. Should calculation of the AI yield a value in excess of 12, the water is considered non-aggressive (Buelow et al, 1980). During a study of ten municipal water supply systems in the US employing AC pipe, Buelow et al (1980) concluded that water is not expected to attack AC pipe when the AI is greater than 11.

Many other factors may be involved in the ability of AC pipe to resist corrosion; metals such as iron may form a protective, resistant layer. Buelow et al (1980) reported that high concentrations of iron in water apparently inhibited corrosion of pipe when the AI was less than 11. Waters posessing characteristics that would normally indicate corrosive potential may in fact not behave as such due to the presence of some corrosion inhibiting mechanism.

SAMPLING AND ANALYTICAL METHODOLOGY

Early attempts to develop reliable methods of estimation of asbestos fiber concentration in water samples were inconsistent. Treated drinking water from Thunder Bay was examined by three independent laboratories and results ranging from 0.06 to 8.45 MFL were reported for similar samples (Ontario MOE, 1975). These inconsistencies may also have resulted in a lack of parity between the findings of early surveys (Hunsinger et al, 1977b). Methodological problems have resulted in the evolution of a standardized analytical technique as established by the Ontario Ministry of the Environment (1977).

Transmission electron microscopy (TEM) is the most appropriate method of analysis for determining actual fiber counts (Logsdon,1979). Light microscopy may assist in the identification of larger fibers; however the lower range of fiber diameter detectable by this method is approximately 1 um, and asbestos particles smaller than this are frequently encountered in water samples (Commins, 1979).

A number of different methods exist for the preparation of a sample for TEM; however, in 1977 the MOE Committee on Asbestos Analysis established an interim method which has been used exclusively in Ontario. This method involves: 1) membrane filtration of the sample; 2) carbon coating of particulate material on filter; 3) placement of a small portion of filter on TEM counting grid and dissolution of filter with chloroform; and 4) identification, sizing and counting of asbestos fibers at 20,000 times magnification.

It must be noted that although the analytical technique has been upgraded and standardized it remains difficult to obtain reproduceable results. Due to the high magnification required to observe morphological characteristics of individual fibers, only a small area of filter from each sample is examined. The fiber concentration observed on this portion of the filter is then extrapolated to the total sample yielding an estimate of the number of fibers per liter of water. Since costs preclude the examination of the entire filter area, a statistical 95 percent confidence interval is assigned to each positive result.

The asbestos sampling technique has similarly experienced an evolution. Sampling is an extremely important aspect of the analytical process; variables are far more difficult to control in the field than in a laboratory setting. Hunsinger (1975) presents a detailed procedure for asbestos sampling, wherein the steps necessary to obtain a representative sample are stressed.

The sampling procedures outlined by Hunsinger (1975) and analytical proceedures developed by the Ontario Ministry of the Environment (1977) were employed for the Ontario asbestos survey contained in Part II of this report.

On-line monitoring of asbestos fiber levels is not readily accomplished. A number of authors maintain that turbidity may be an easily and readily attainable estimate of asbestos fiber concentration. Turbidity alone, however, may not provide an accurate measure of asbestos fiber concentration. Finished water with a turbidity of 0.10 NTU will generally have low fiber levels (Logsdon, 1979). Similarly, Hunsinger et al (1977a) reported that reduced turbidity generally coincided with low chrysotile asbestos concentrations. Lawrence and Zimmerman (1976 in: Hunsinger et al, 1977b) however, point out that turbidity does not relate to fiber levels when such fiber concentrations in finished water are very low.

The University of Minnesota has developed an optical particle counter that is capable of on-line detection of fibrous particles. Although not as accurate as TEM, this method was proven superior to turbidity in providing an immediate indication of asbestos fiber concentration (Schleppenbach, 1984).

ASBESTOS FIBER REMOVAL BY CONVENTIONAL WATER PURIFICATION PROCESSES

The removal of asbestos from a water source is readily accomplished by the coagulation, flocculation, sedimentation and filtration processes of conventional drinking water purification (Commins, 1979; Lawrence and Zimmerman 1976 in: Hunsinger et al, 1977b; IJC, 1975). Toft et al (1981) report that conventional treatment yielded asbestos levels 300 times below initial raw water concentrations. Granular media filtration has given asbestos removal of 99.99 percent; however, such reduction was attained by careful control of pH and coagulant dosages and close monitoring of raw and filtered water turbidity (Logsdon, 1979).

Schleppenbach (1984) suggests that filtering-to-waste for the first five to ten minutes following filter backwash may substantially reduce asbestos fiber concentration in finished water. Asbestos fiber levels as high as 15 MFL were reported during the first 5 minutes of operation after filter backwash in a Minnesota pilot plant designed specifically for asbestos removal.

Hunsinger et al (1977b) employed a pilot plant in attempting to determine the efficiency of asbestos fiber removal by coagulation/filtration. Difficulties were encountered in maintaining the stability of artifically spiked asbestos concentrations in raw water. Although actual results were obscured by operational problems, qualitative analysis led to the conclusion that significant reductions of asbestos fiber levels were achieved by conventional treatment.

Generally, when a conventional water treatment plant is operating under optimal conditions (provided that raw water asbestos concentrations are not excessively high) the concentration of asbestos fibers in finished water will approach zero (Toft et al, 1981).

ASBESTOS IN DRINKING WATER AND ASSOCIATED DISEASE

The incidence of cancers associated with the human respiratory tract is significantly higher among people exposed to airborne asbestos fibers (Logsdon, 1979 ; Becklake,1982). Becklake (1982) provides a review of work by numerous investigators concerning exposure to airborne asbestos.

Information concerning the effects of ingestion of such fibers, however, remains inconclusive (Toft and Meek, 1983; Ontario Ministry of the Attorney General, 1984; Federal Register, 1985).

Fiber size has been recognized as a determinant of the carcinogenicity of asbestos. High concentrations of fibers of lengths in excess of 10 um have been correlated with tumors in laboratory animals (Millette et al, 1980; Federal Register, 1985).

Wigle (1977 in: Toft and Meek,1983) studied human cancer mortalities in 22 Quebec municipalities between 1964 and 1973. Two of these locations had been heavily involved in asbestos mining since the late 1800's and drinking water surveys indicated fiber concentrations on the order of 200 MFL. Cancer mortality was significantly higher among males occupationally exposed to asbestos. Female members of the populations (assumed to be drinking water from the same source as males) did not exhibit any excess cancer mortalities.

DRINKING WATER GUIDELINES

The US EPA has proposed a Recommended Maximum Contaminant Level (RMCL) for fibers longer than 10 um of 7.1 MFL in drinking water (Federal Register, 1985). Controversy has surrounded this RMCL; the proven carcinogenicity of inhaled fibers appears to be the basis for this recommendation for drinking water (AWWA, 1986).

Although it has been recommended that asbestos levels be kept as low as possible (Ontario MOE, 1983), a drinking water objective has not been warranted due to a lack of conclusive evidence suggesting disease promotion of ingested asbestos. The Guidelines for Canadian Drinking Water Quality (Health and Welfare Canada, 1987) states that there is no need to set quantitative numerical guidelines. These Guidelines are set by the Federal-Provincial Subcommittee on Drinking Water, on which Ontario has representation. Ontario adopts the recommendations of this Subcommittee and can set more stringent objectives for specific parameters if considered appropriate.

PART II : ONTARIO DRINKING WATER ASBESTOS SURVEY

In 1976 the Ontario Ministry of the Environment, in cooperation with municipal personnel, initiated an extensive province-wide survey of asbestos in drinking water. This report contains results that were obtained by standardized analytical and sampling techniques. Early surveys, in which the validity of results may have been compromised by sampling and analytical difficulties, are not included.

SURVEY RESULTS

A complete set of results for all municipalities sampled during this survey are presented in Appendix 1. The majority of analyses of these samples produced asbestos levels Below Minimum Detection Limits (BMDL).

Water supplies yielding detectable asbestos concentrations are examined in greater detail in Table 1. Various types of drinking water treatment were encountered throughout this study, ranging in complexity from simple disinfection (chlorination) to conventional treatment (coagulation, flocculation, sedimentation and filtration). The specific method of treatment employed for each sample is indicated opposite the 'Type of Treatment' category in Table 1. Raw water samples were taken at a point prior to treatment thus the type of treatment is not applicable.

In Table 1, values listed opposite the Fiber Concentration category indicate the estimated fiber concentration for each asbestos type, followed in brackets by the upper and lower extremes of the 95 percent confidence interval.

Results of certain physical and chemical analyses, and the corrosive indices (AI and Langelier Index) are also presented in Table 1. The AI is a function of the pH, total alkalinity (A-as mg/L $CaCO_3$) and calcium hardness (H-as mg/L $CaCO_3$) of the water, wherein:

1) $$AI = pH + \log (A \times H).$$

The Langelier Indices were calculated by finding the pH at calcium carbonate saturation (pH_s) and subtracting this from the observed pH. In the following equation, T and B are constants as functions of water temperature and total dissolved residue, respectively and A = total alkalinity (as mg/L $CaCO_3$):

1) $$pH_s = T + B - \log (Ca^{2+}) - \log (A)$$

2) $$\text{Langelier Index} = pH - pH_s.$$

Detection limits for asbestos fibers vary substantially between samples, as is evident in Table 1 and Appendix 1. Such differences are largely due to the presence of high levels of particulate matter other than asbestos. This interference is particularly prominent in raw water samples.

From Figure 1, analysis (for asbestos fiber concentration) of 889 samples from 368 municipal water supplies yielded 89 positive results, 50 in raw and 39 in treated water. Of these 89 positive results, asbestos fiber concentrations were reported at the detection limit in 30 samples.

During this survey, levels of chrysotile asbestos in excess of 7.1 MFL were observed in nine samples; five in raw water and four in treated water.

The four samples exhibiting chrysotile asbestos levels in excess of 7.1 MFL in treated water were from Coldwater (40 MFL), Lambeth (10 MFL) and MacTier (340 and 35 MFL). These results represented an estimate of total chrysotile fibers of all lengths. Although individual fibers were sized, no differentation was made between long and short fibers in the reported concentrations.

The fiber concentrations reported in samples from Coldwater and Lambeth are actual values derived from analyses. These results, however, may be considered questionable when taken in context with the following information:

1) Coldwater and Lambeth are groundwater supplies; groundwater from numerous other locations did not contain significant levels of asbestos.

2) The treated water from these locations was generally non-corrosive, therefore it is unlikely that AC pipe was the source of the asbestos fibers.

3) The Lambeth supply received activated silica and chlorine, while treatment at Coldwater consisted of chlorination only. Neither chlorine or activated silica have been found to contain significant levels of asbestos.

4) Subsequent samples taken since the initial series, for both of these locations, yielded levels of asbestos below the minimum detection limits.

The detection of asbestos in treated water from MacTier was determined to be a result of the corrosive action of the water on the AC pipe in the distribution system. Treatment of the water with soda ash to inhibit corrosion has reduced asbestos fiber concentrations in treated water to levels well below 7.1 MFL (Jobb, 1987).

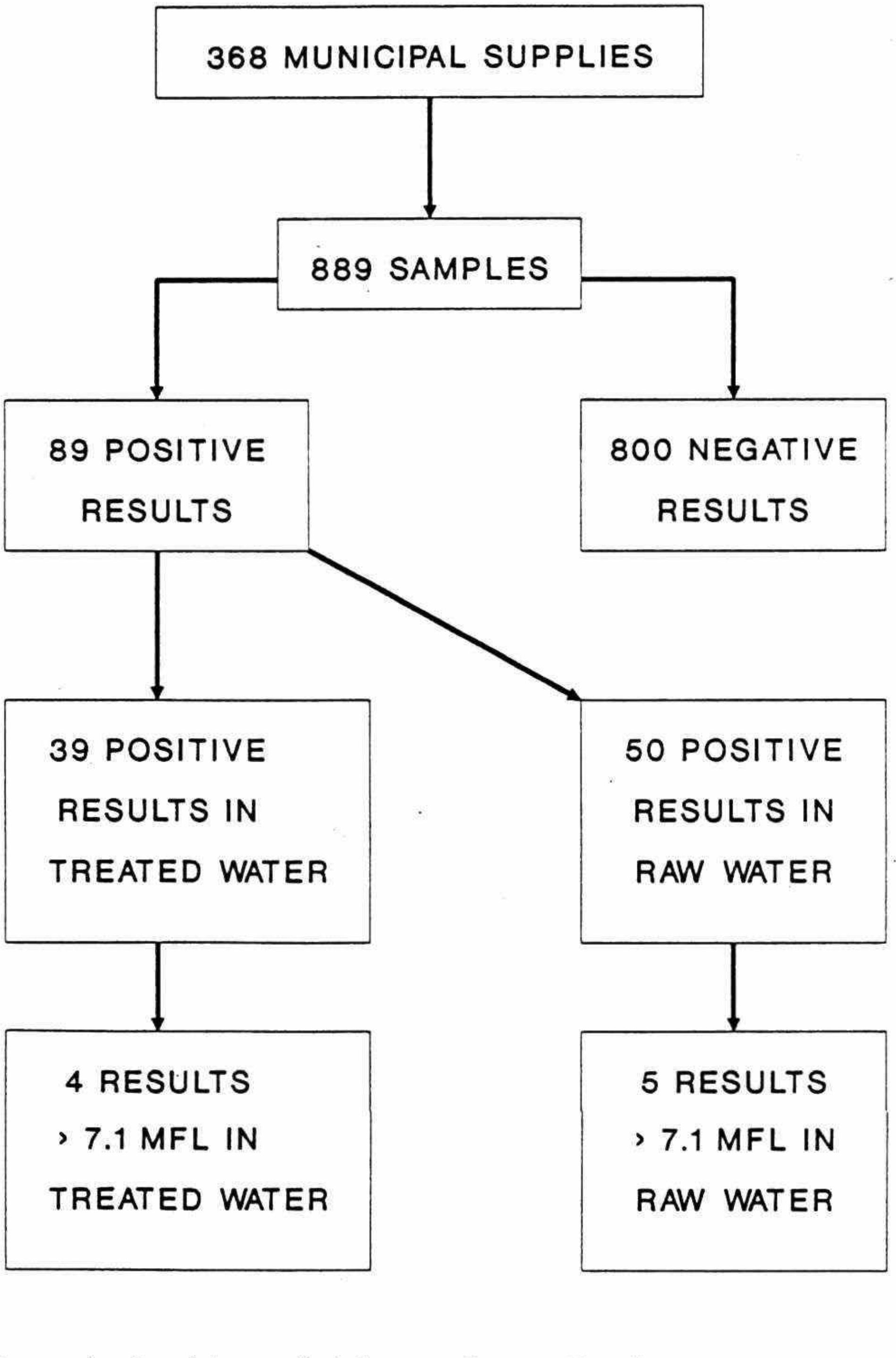
368 MUNICIPAL SUPPLIES
889 SAMPLES
89 POSITIVE RESULTS
800 NEGATIVE RESULTS
39 POSITIVE RESULTS IN TREATED WATER
50 POSITIVE RESULTS IN RAW WATER
4 RESULTS › 7.1 MFL IN TREATED WATER
5 RESULTS › 7.1 MFL IN RAW WATER

Figure 1. Breakdown of Asbestos Survey Results

Statistical analyses were performed on fiber size data from Coldwater, Lambeth and the two samples from MacTier. A 99 percent upper confidence level was constructed for mean fiber size for each location. The probability of occurrence of fibers longer than 10 um was also determined. Details of statistical methodology are presented in Appendix 2.

Estimated mean chrysotile fiber size in treated water was not expected to exceed 2.27 um for Coldwater, 3.16 um for Lambeth and 1.65 um for either sample from MacTier. The calculated probability of occurrence of fibers longer than 10 um was less than 0.01 percent for each of these samples.

The five locations where asbestos was detected in the raw water above 7.1 MFL did not exhibit asbestos concentrations above the detection limit in the corresponding treated water. These locations were: Morrisburg, Napanee, Collingwood, Orillia and St. Pascal.

Asbestos fiber concentrations in treated water from MacTier were significantly higher than in raw water. Examination of the aggressiveness and Langelier indices indicated that water from this location was in the corrosive range. Five other municipalities (Bala, North Bay, South River, St. Pascal and Verner) whose water was corrosive had treated water which contained asbestos levels at or below the minimum detection limit. This may have been due to a lack of an asbestos source in the distribution system.

Amphibole type asbestos fibers were not found at any location in excess of 7.1 MFL during this survey. Samples from MacTier and Lambeth contained detectable levels of amphibole asbestos in treated water, however, very few fibers were counted and of these, the maximum observed length was 2.3 um. The majority of remaining water supplies containing amphibole asbestos exhibited concentrations less than 1.0 MFL.

There were twelve positive results in treated water from purification plants employing conventional treatment. The highest observed chrysotile asbestos concentration in water from a conventional plant was 2.0 MFL in Casselman.

DISCUSSION

Research involving long term experimentation with laboratory animals indicates that ingestion of high levels of short (less than 10 um) asbestos fibers does not promote adverse health effects. The RMCL of 7.1 MFL, as proposed by the US EPA, corresponds to asbestos fibers greater than 10 um in length. Health and Welfare Canada states that there is no need to set quantitative numerical guidelines for asbestos fiber concentration in drinking water.

Asbestos concentrations in excess of 7.1 MFL were found in only 9 of the 889 water samples examined during this survey. In treated water, asbestos levels exceeding 7.1 MFL were encountered on four occasions. The probability of occurrence of fibers longer than 10 um was less than 0.01

percent for each of these samples. The 99 percent upper confidence limit for mean fiber size did not exceed 3.16 um in any sample.

Chrysotile asbestos was more frequently encountered than the amphibole fiber type in water supplies throughout this survey. Since chrysotile fibers tend to be short, the chance of occurrence of high levels of long fiber asbestos in Ontario water supplies would appear to be low.

The results of this survey appear to be consistent with those of other studies; conventional water purification is capable of substantial reduction of asbestos fiber concentrations. Operational fine tuning of drinking water plants may enable even greater reduction of asbestos fiber concentration.

SURVEY DATA

The following pages contain the results of physical and chemical analyses of water samples collected from various municipalities in Ontario. Table 1 provides detailed information on those samples which contained asbestos fibers, while Appendix 1 lists the results of all samples analysed, from all locations sampled.

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Ajax	Armstrong	Armstrong	Bala	Bala
GENERAL					
Date Sampled	15/03/78	13/08/80	13/08/80	13/02/78	20/02/78
Surface or Ground	G	G	G	S	S
Raw or Treated	R	R	T	R	T
Type of Treatment[1]	NA	NA	chlorination	NA	chlorination
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.4)	0.80 (0.10-1.00)	0.57 (0.24-0.91)	BMDL (0.00-0.40)	BMDL (0.0-0.2)
Detection Limit	0.4	0.2	0.05	0.40	0.2
Mass Conc. (ug/l)	BMDL	0.006	BMDL	BMDL	
Amphibole -					
Fiber Conc. (MFL)	0.4 (0.0-1.0)	0.2 (0.00-0.40)	0.05 (0.00-0.16)	0.40 (0.00-1.00)	0.2 (0.0-0.6)
Detection Limit	0.4	0.2	0.05	0.40	0.2
Mass Conc. (ug/l)	0.03	0.02	0.003	0.02	0.01
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	138.0	248.0	249.0	14.0	14
Alkalinity (mg/l $CaCO_3$)	98.0	220.0	220.0	7.0	7.0
pH	8.0	7.7	7.8	7.0	6.9
Turbidity (FTU)	5.2	1.2	1.1	0.54	0.42
ASTM - C500[3]	12.01	-	-	8.89	8.79
Langelier's Index[4]	-0.47	-	-	-3.32	-3.42
Temperature (°C)	2.5	-	-	2.0	2.0

BMDL indicates Below Minimum Detection Limit. "-" indicates data not available.

1. Type of Treatment at the point of sampling; (NA indicates untreated sample); DWT indicates distribution without treatment.
2. Fiber concentration in Million Fibers/Litre (followed by the upper and lower 95% confidence interval.)
3. American Society for Testing and Materials (Aggressiveness Index) - see results section for definition.

4. Langelier Corrosion Index - see results section for definition.

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Blind River	Brantford	Brechin	Campbellville	Casselman
GENERAL					
Date Sampled	02/09/80	30/04/86	06/03/78	08/12/81	21/02/78
Surface or Ground	G	S	S	G	S
Raw or Treated	T	T	T	R	R
Type of Treatment[1]	chlorination	conventional	filtration & chlorination	DWT	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.16)	0.2 (0.0-0.2)	BMDL (0.0-0.2)	0.05 (0.0-0.16)	2.00 (0.08-4.00)
Detection Limit	0.16	0.2	0.2	-	0.20
Mass Conc. (ug/l)	BMDL	0.000	BMDL	-	0.04
Amphibole -					
Fiber Conc. (MFL)	0.16 (0.0-0.5)	0.2 (0.0-0.2)	0.60 (0.00-1.00)	BMDL (0.0-0.05)	0.20 (0.00-0.80)
Detection Limit	0.16	0.2	0.2	-	0.20
Mass Conc. (ug/l)	BMDL	0.000	0.11	-	0.76
PHYSICAL/CHEMICAL					
Hardness (mg/l CaCO$_3$)	156.0	268.0	160.0	308.0	306.0
Alkalinity (mg/l CaCO$_3$)	140.0	189.7	132.0	266.0	240.0
pH	8.0	8.12	8.2	6.6	7.6
Turbidity (FTU)	0.45	0.28	0.63	0.29	7.2
ASTM - C500[3]	12.20	-	12.44	12.61	12.4
Langelier's Index[4]	-0.20	-	-0.03	0.30	0.15
Temperature (°C)	-	-	3.0	14.0	2.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Casselman	Charlottenburg	Clarence Creek	Clifford	Cobourg
GENERAL					
Date Sampled	21/02/78	15/03/78	21/02/78	31/01/78	01/03/78
Surface or Ground	S	S	G	G	S
Raw or Treated	T	T	R	R	R
Type of Treatment[1]	conventional	filtration & chlorination	NA	DWT	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	2.00 (0.40-4.00)	2.00 (0.80-2.00)	BMDL (0.00-0.40)	0.20 (0.00-0.80)	6.00 (0.00-10.00)
Detection Limit	0.20	0.20	0.40	0.20	1.00
Mass Conc. (ug/l)	0.10	0.02	BMDL	0.00	0.08
Amphibole -					
Fiber Conc. (MFL)	0.20 (0.00-0.80)	BMDL (0.00-0.20)	0.40 (0.00-1.00)	BMDL (0.00-0.20)	BMDL (0.00-1.00)
Detection Limit	0.20	0.20	0.40	0.20	1.00
Mass Conc. (ug/l)	0.01	BMDL	0.022	BMDL	BMDL
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	298.0	138.0	163.0	326.0	134.0
Alkalinity (mg/l $CaCO_3$)	197.0	98.0	327.0	276.0	101.0
pH	7.2	8.10	7.60	7.50	7.9
Turbidity (FTU)	5.8	1.20	0.61	5.00	2.0
ASTM - C500[3]	11.90	12.11	12.20	12.40	11.93
Langelier's Index[4]	-0.33	-0.34	0.01	0.11	-0.14
Temperature (°C)	3.0	4.0	-	0.0	2.5

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Cobourg	Coldwater	Collingwood	Ear Falls	Earlton
GENERAL					
Date Sampled	01/03/78	09/03/78	16/08/77	25/04/78	04/09/78
Surface or Ground	S	G (Spring)	S	S	G
Raw or Treated	T	T	R	R	R
Type of Treatment[1]	conventional	chlorination	NA	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.4 (0.0-1.0)	40.0 (25.0-55.0)	9.70 (5.5-14.0)	4.00 (0.2-7.0)	0.80 (0.10-1.00)
Detection Limit	0.2	0.40	0.40	0.4	0.20
Mass Conc. (ug/l)	0.00	0.13	0.04	0.13	0.01
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	BMDL (0.0-0.4)	-	BMDL (0.0-0.4)	0.20 (0.00-0.40)
Detection Limit	0.2	0.4	-	0.4	0.20
Mass Conc. (ug/l)	BMDL	BMDL	-	BMDL	0.02
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	133.0	125.0	-	43.0	248.0
Alkalinity (mg/l $CaCO_3$)	80.0	112.0	-	44.0	220.0
pH	7.4	8.10	-	7.6	7.7
Turbidity (FTU)	0.22	0.54	-	2.2	1.20
ASTM - C500[3]	11.33	12.15	-	10.82	12.24
Langelier's Index[4]	-0.88	-0.34	-	-1.55	-0.20
Temperature (°C)	-	2.0	-	10.0	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY			
	Earlton	Essex	Foleyet	Hamilton
GENERAL				
Date Sampled	04/09/78	20/07/81	02/09/80	09/02/78
Surface or Ground	G	S	S	S
Raw or Treated	T	R	T	T
Type of Treatment[1]	chlorination	NA	chlorination	conventional
ASBESTOS				
Chrysotile -				
Fiber Conc. (MFL)[2]	0.60 (0.30-0.90)	0.2 (0.0-0.6)	0.23 (0.0-0.7)	0.2 (0.0-0.8)
Detection Limit	0.05	-	0.11	0.20
Mass Conc. (ug/l)	0.01	-	-	0.0023
Amphibole -				
Fiber Conc. (MFL)	0.05 (0.0-0.20)	BMDL (0.0-0.1)	0.11 (0.0-0.35)	0.2 (0.0-0.8)
Detection Limit	0.05	-	0.11	0.20
Mass Conc. (ug/l)	0.00	-	-	0.27
PHYSICAL/CHEMICAL				
Hardness (mg/l CaCO$_3$)	249.0	112.0	74.0	139.0
Alkalinity (mg/l CaCO$_3$)	220.0	88.0	67.0	87.0
pH	7.8	8.0	8.0	7.5
Turbidity (FTU)	1.10	7.1	2.20	1.20
ASTM - C500[3]	12.33	11.91	11.57	11.50
Langelier's Index[4]	-	-0.25	-0.88	-0.73
Temperature (°C)	-	25.0	-	2.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Holtyre	Ingersoll	Kingsville	Lakeview	Lambeth
GENERAL					
Date Sampled	27/08/80	06/02/78	20/07/81	14/03/78	09/05/78
Surface or Ground	G	G	S	S	G
Raw or Treated	T	T	R	R	T
Type of Treatment[1]	chlorination	aeration & chlorination	NA	NA	iron sequestation & chlorination
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.23 (0.0-0.58)	0.60 (0.00-1.00)	0.2 (0.0-0.6)	0.4 (0.0-1.0)	10.0 (7.0-15.0)
Detection Limit	0.12	0.20	0.2	0.2	0.2
Mass Conc. (ug/l)	BMDL	0.01	-	0.00	0.047
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.12)	BMDL (0.0-0.2)	BMDL (0.0-0.2)	0.4 (0.0-1.0)	0.2 (0.0-0.4)
Detection Limit	0.12	0.20	0.2	0.2	0.2
Mass Conc. (ug/l)	BMDL	BMDL	BMDL	0.87	0.011
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	200.0	367.0	112.0	140.0	272.0
Alkalinity (mg/l $CaCO_3$)	219.0	264.0	88.0	96.0	258.0
pH	8.0	7.9	8.0	8.0	7.6
Turbidity (FTU)	0.96	0.35	7.1	0.86	0.68
ASTM - C500[3]	12.49	12.79	11.91	11.99	12.36
Langelier's Index[4]	0.05	0.66	-0.25	-0.48	0.00
Temperature (°C)	-	8.0	25.0	3.0	10.5

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Lancaster	Lansdowne	Leamington	Lindsay	London
GENERAL					
Date Sampled	16/10/80	12/08/80	07/20/81	27/02/78	23/02/78
Surface or Ground	G	G	S	S	S
Raw or Treated	R	T	R	T	T
Type of Treatment[1]	NA	not reported	NA	conventional	conventional
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL	0.90 (0.42-1.38)	0.2 (0.0-0.6)	BMDL	BMDL (0.0-0.2)
Detection Limit	0.6	0.06	0.1	0.2	0.2
Mass Conc. (ug/l)	BMDL	-	-	BMDL	BMDL
Amphibole -					
Fiber Conc. (MFL)	0.60 (0.0-1.92)	1.22 (0.53-1.91)	BMDL	0.4 (0.0-1.0)	0.2 (0.0-0.6)
Detection Limit	0.20	0.06	0.1	0.2	0.2
Mass Conc. (ug/l)	0.000	-	-	0.053	0.01
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	354.0	451.0	112.0	262.0	102.0
Alkalinity (mg/l $CaCO_3$)	284.0	310.0	88.0	222.0	81.0
pH	7.9	7.7	8.0	7.5	7.8
Turbidity (FTU)	2.1	0.21	7.1	1.1	0.39
ASTM - C500[3]	12.69	-	11.91	-	11.62
Langelier's Index[4]	0.32	-	-0.25	-	-1.14
Temperature (°C)	10.0	-	25.0	-	3.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	MacTier	MacTier	MacTier	Madoc	Markdale
GENERAL					
Date Sampled	24/05/79	24/05/79	05/02/80	08/10/80	06/03/78
Surface or Ground	S	S	S	G	G
Raw or Treated	T	T	T	T	T
Type of Treatment[1]	chlorination G.B. Beacon	chlorination James St.	chlorination James St.	chlorination	chlorination
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	2.00 (0.00-5.00)	340.0 (260.0-420.0)	35.0 (25.0-45.0)	BMDL (0.0-0.08)	0.20 (0.00-0.40)
Detection Limit	0.2	0.60	0.40	0.08	0.20
Mass Conc. (ug/l)	0.01	0.90	0.12	BMDL	0.00
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	2.0 (0.0-5.0)	0.4 (0.0-1.0)	0.24 (0.00-0.52)	BMDL (0.0-0.2)
Detection Limit	0.2	0.6	0.4	0.08	0.20
Mass Conc. (ug/l)	BMDL	0.05	0.01	0.00	BMDL
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	20.0	29.0	27.0	364	266.0
Alkalinity (mg/l $CaCO_3$)	10.0	20.0	16.0	304	247.0
pH	6.8	7.4	7.6	7.1	7.7
Turbidity (FTU)	0.44	0.57	0.46	0.31	0.42
ASTM - C500[3]	9.00	10.10	10.20	12.01	12.28
Langelier's Index[4]	-3.44	-1.58	-2.24	-0.44	-0.10
Temperature (°C)	2.0	2.0	-	-	9.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Matachewan	Matachewan	Matachewan	Matachewan	Midland
GENERAL					
Date Sampled	14/11/78	14/11/78	29/05/79	29/05/79	15/03/78
Surface or Ground	G	G	G	G	G
Raw or Treated	R	T	T	T	R
Type of Treatment^1	NA	sequestration & chlorination	sequestration & chlorination	sequestration & chlorination	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)^2	0.60 (0.00-1.00)	0.60 (0.4-1.0)	0.80 (0.0-2.00)	0.40 (0.0-0.8)	0.4 (0.0-1.0)
Detection Limit	0.20	0.20	0.20	0.20	0.4
Mass Conc. (ug/l)	0.001	0.000	0.01	0.002	BMDL
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	0.2 (0.0-0.2)	BMDL (0.0-0.2)	BMDL (0.0-0.2)	BMDL (0.0-0.4)
Detection Limit	0.2	0.2	0.2	0.2	0.4
Mass Conc. (ug/l)	BMDL	0.003	BMDL	BMDL	BMDL
PHYSICAL/CHEMICAL					
Hardness (mg/l CaCO$_3$)	102.0	102.0	103.0	107.0	174.0
Alkalinity (mg/l CaCO$_3$)	88.0	88.0	87.0	90.0	176.0
pH	8.1	8.1	7.9	7.9	8.0
Turbidity (FTU)	0.25	0.26	0.57	0.41	0.84
ASTM - C500^3	12.00	12.00	11.70	11.80	12.32
Langelier's Index^4	-0.51	-0.51	-0.75	-0.69	-0.10
Temperature (°C)	-	-	-	-	6.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Minden	Minden	Minden	Morrisburg	Napanee
GENERAL					
Date Sampled	23/02/78	23/05/79	23/05/79	30/01/78	30/01/78
Surface or Ground	G	G	G	S	S
Raw or Treated	R	T	T	R	R
Type of Treatment[1]	NA	chlorination	chlorination	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.60 (0.0-1.0)	0.80 (0.20-1.0)	0.20 (0.0-0.6)	100.0 (65.0-140.0)	35.0 (15.0-50.0)
Detection Limit	0.2	0.20	0.20	0.90	1.60
Mass Conc. (ug/l)	0.00	0.02	0.01	0.55	0.43
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	BMDL (0.0-0.2)	BMDL (0.0-0.2)	BMDL (0.0-0.9)	2.0 (0.0-5.0)
Detection Limit	0.2	0.20	0.2	0.9	1.60
Mass Conc. (ug/l)	BMDL	BMDL	BMDL	BMDL	0.03
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	140.0	178.0	152.0	137.0	132.0
Alkalinity (mg/l $CaCO_3$)	101.0	113.0	104.0	96.0	115.0
pH	7.9	8.2	8.1	7.8	7.6
Turbidity (FTU)	0.49	0.33	0.75	1.6	2.0
ASTM - C500[3]	11.95	12.39	12.17	11.80	11.70
Langelier's Index[4]	-0.20	0.02	-0.20	-0.36	-0.53
Temperature (°C)	6.0	-	-	4.0	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Niagara-on-the-Lake	North Bay	Orillia	Orillia	Paris
GENERAL					
Date Sampled	15/05/77	05/12/77	17/08/77	13/10/77	06/02/78
Surface or Ground	S	S	S	S	G
Raw or Treated	R	T	R	R	R
Type of Treatment[1]	NA	fluoridation & chlorination	NA	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.3 (0.0-0.5)	BMDL (0.0-0.2)	14.0 (-)	0.6 (0.0-1.0)	BMDL (0.0-0.2)
Detection Limit	0.2	0.2	0.4	0.4	0.2
Mass Conc. (ug/l)	-	BMDL	-	0.002	BMDL
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.1)	0.2 (0.0-0.6)	BMDL (0.0-0.1)	BMDL (0.0-0.2)	0.2 (0.0-0.8)
Detection Limit	0.1	0.2	0.1	0.2	0.2
Mass Conc. (ug/l)	-	0.09	BMDL	BMDL	0.02
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	128.0	31.0	132.0	136.0	550.0
Alkalinity (mg/l $CaCO_3$)	95.0	10.0	107.0	111.0	219.0
pH	8.3	7.4	8.2	8.1	7.5
Turbidity (FTU)	1.3	0.47	1.00	1.10	0.30
ASTM - C500[3]	-	9.80	12.40	12.20	12.50
Langelier's Index[4]	-	-2.42	0.36	0.09	0.39
Temperature (°C)	-	-	25.0	-	10.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Parry Sound	Pembroke	Port McNichol	Port Perry	South River
GENERAL					
Date Sampled	29/08/77	11/07/80	17/08/77	16/03/78	24/09/80
Surface or Ground	S	S	S	G	G
Raw or Treated	R	T	R	R	R
Type of Treatment[1]	NA	chlorination	NA	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.80 (0.00-1.40)	0.06 (0.00-0.17)	BMDL (0.0-0.4)	BMDL (0.0-0.4)	BMDL (0.0-0.17)
Detection Limit	0.40	0.05	0.4	0.4	0.17
Mass Conc. (ug/l)	BMDL	0.00	BMDL	BMDL	BMDL
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	BMDL (0.0-0.05)	0.20 (0.0-0.2)	0.4 (0.0-1.0)	0.17 (0.0-0.56)
Detection Limit	0.20	0.05	0.20	0.4	0.17
Mass Conc. (ug/l)	BMDL	BMDL	0.00	0.29	BMDL
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	66.0	-	87.0	213.0	55.0
Alkalinity (mg/l $CaCO_3$)	51.0	-	72.0	220.0	22.0
pH	8.0	-	8.0	7.8	6.3
Turbidity (FTU)	0.40	-	0.8	2.20	0.57
ASTM - C500[3]	11.40	-	11.70	12.30	9.30
Langelier's Index[4]	-0.67	-	-0.24	-0.18	-3.10
Temperature (°C)	-	-	21.0	3.0	9.8

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	St. Isidore de Presc.	St. Pascal	Stayner	Strathroy	Thunder Bay
GENERAL					
Date Sampled	06/02/78	20/02/78	11/04/78	06/03/78	28/06/78
Surface or Ground	G	S	G	G	S
Raw or Treated	T	R	T	R	T
Type of Treatment[1]	chlorination	NA	chlorination	DWT	conventional
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	0.2 (0.0-0.8)	210.0 (150.0-270.0)	3.0 (2.0-4.0)	BMDL (0.0-0.4)	BMDL (0.0-0.2)
Detection Limit	0.2	1.40	0.20	0.40	0.2
Mass Conc. (ug/l)	0.002	9.20	0.10	BMDL	BMDL
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.2)	BMDL (0.0-1.4)	BMDL (0.0-0.2)	0.40 (0.0-1.0)	0.40 (0.0-1.0)
Detection Limit	0.2	1.40	0.20	0.40	0.20
Mass Conc. (ug/l)	BMDL	BMDL	BMDL	0.30	0.01
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	190.0	31.0	270.0	236.0	46.0
Alkalinity (mg/l $CaCO_3$)	297.0	24.0	243.0	149.0	42.0
pH	7.9	7.00	7.7	5.0	7.4
Turbidity (FTU)	0.5	2.4	0.70	0.42	0.35
ASTM - C500[3]	12.60	9.80	12.36	12.32	10.60
Langelier's Index[4]	0.34	-2.84	-0.08	-0.02	-
Temperature (°C)	-	-	5.0	11.6	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Thunder Bay	Thunder Bay	Thunder Bay	Thunder Bay	Timmins
GENERAL					
Date Sampled	25/09/78	03/01/79	03/01/79	31/07/79	26/08/80
Surface or Ground	S	S	S	S	S
Raw or Treated	R	R	T	T	T
Type of Treatment[1]	NA	NA	conventional	conventional	conventional
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.2)	BMDL (0.0-0.2)	BMDL (0.0-0.2)	0.6 (0.0-1.0)	0.30 (0.0-0.66)
Detection Limit	0.2	0.2	0.2	0.2	0.07
Mass Conc. (ug/l)	BMDL	BMDL	BMDL	0.16	BMDL
Amphibole -					
Fiber Conc. (MFL)	0.20 (0.0-0.6)	0.2 (0.0-0.4)	0.8 (0.2-1.0)	BMDL (0.0-0.2)	0.37 (0.06-0.68)
Detection Limit	0.20	0.2	0.2	0.2	0.07
Mass Conc. (ug/l)	0.01	0.12	0.052	BMDL	BMDL
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	-	46.0	46.0	-	135.0
Alkalinity (mg/l $CaCO_3$)	-	44.0	42.0	-	126.0
pH	-	7.7	7.5	-	7.7
Turbidity (FTU)	-	0.93	1.2	-	0.40
ASTM - C500[3]	-	10.89	10.67	-	11.81
Langelier's Index[4]	-	-1.48	-1.70	-	-0.56
Temperature (°C)	-	-	-	-	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Tiverton	Toronto Island F.P.	Toronto Easterly F.P.	Toronto - R.L. Clark	Toronto - R.L. Clark
GENERAL					
Date Sampled	20/02/78	16/07/79	10/09/80	28/03/78	28/03/78
Surface or Ground	G	S	S	S	S
Raw or Treated	R	R	R	R	T
Type of Treatment[1]	DWT	NA	NA	NA	conventional
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.5)	0.17 (0.0-0.43)	0.17 (0.0-0.43)	1.0 (0.0-2.0)	0.6 (0.0-1.0)
Detection Limit	0.50	0.09	0.09	0.8	0.50
Mass Conc. (ug/l)	BMDL	0.0	0.00	0.63	0.01
Amphibole -					
Fiber Conc. (MFL)	1.0 (0.0-2.0)	BMDL (0.0-0.09)	BMDL (0.0-0.09)	0.4 (0.0-1.0)	0.2 (0.0-0.6)
Detection Limit	0.50	0.09	0.09	0.2	0.1
Mass Conc. (ug/l)	0.05	BMDL	BMDL	0.3	0.01
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	498.0	136.0	137.0	137.0	138.0
Alkalinity (mg/l $CaCO_3$)	90.0	98.0	94.0	97.0	87.0
pH	7.7	8.10	8.0	7.5	7.4
Turbidity (FTU)	5.2	0.86	0.42	3.5	0.51
ASTM - C500[3]	12.25	12.10	11.99	11.51	11.38
Langelier's Index[4]	0.13	-	-	-	-
Temperature (°C)	8.0	-	-	-	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Toronto - R.L. Clark	Toronto - R.C. Harris	Toronto - R.C. Harris	Trenton	Union
GENERAL					
Date Sampled	16/07/80	29/03/78	16/07/80	11/08/80	20/07/77
Surface or Ground	S	S	S	S	S
Raw or Treated	R	T	R	R	R
Type of Treatment[1]	NA	conventional	NA	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	1.52 (0.0-3.91)	BMDL (0.0-0.4)	0.17 (0.0-0.43)	BMDL (0.0-1.74)	1.0 (0.0-2.0)
Detection Limit	0.51	0.40	0.09	1.74	0.4
Mass Conc. (ug/l)	0.00	BMDL	0.00	BMDL	0.00
Amphibole -					
Fiber Conc. (MFL)	BMDL (0.0-0.51)	0.2 (0.0-0.6)	BMDL (0.0-0.09)	1.74 (0.0-5.57)	0.2 (0.0-0.4)
Detection Limit	0.51	0.2	0.09	1.74	0.1
Mass Conc. (ug/l)	BMDL	0.00	BMDL	0.001	0.00
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	137.0	136.0	136.0	-	114.0
Alkalinity (mg/l $CaCO_3$)	102.0	91.0	96.0	-	91.0
pH	8.2	7.8	8.1	-	7.6
Turbidity (FTU)	23.0	0.58	1.0	-	4.2
ASTM - C500[3]	12.20	11.79	12.10	-	11.53
Langelier's Index[4]	-	-	-	-	-0.33
Temperature (°C)	-	-	-	-	28.0

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Verner	Verner	Waterford	Waterloo	West Lorne
GENERAL					
Date Sampled	15/01/80	14/09/80	31/01/78	25/01/78	27/07/77
Surface or Ground	S	S	G	G	G
Raw or Treated	R	T	R	R	R
Type of Treatment[1]	NA	DWT	NA	DWT	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.35)	BMDL (0.0-0.09)	0.2 (0.0-0.6)	BMDL (0.0-0.2)	BMDL (0.0-0.4)
Detection Limit	0.35	0.09	0.20	0.2	0.4
Mass Conc. (ug/l)	BMDL	BMDL	0.004	BMDL	BMDL
Amphibole -					
Fiber Conc. (MFL)	0.35 (0.0-1.11)	0.17 (0.0-0.56)	BMDL (0.0-0.2)	0.2 (0.0-0.8)	0.2 (0.0-0.4)
Detection Limit	0.35	0.09	0.20	0.2	0.21
Mass Conc. (ug/l)	0.00	0.00	BMDL	0.051	-
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	36.0	38.0	343.0	549.0	133.0
Alkalinity (mg/l $CaCO_3$)	23.0	12.0	229.0	295.0	101.0
pH	7.1	6.7	7.7	7.5	7.5
Turbidity (FTU)	32.0	0.53	0.29	0.47	2.0
ASTM - C500[3]	9.90	9.18	12.50	12.60	-
Langelier's Index[4]	-2.50	-3.22	0.48	0.40	-
Temperature (°C)	8.0	8.0	-	-	-

TABLE 1: POSITIVE ASBESTOS RESULTS

	MUNICIPALITY				
	Wheatley	Whitby	Windsor	Woodstock	Woodstock
GENERAL					
Date Sampled	25/07/77	15/03/78	06/03/78	07/02/78	23/01/78
Surface or Ground	S	S	S	G	G
Raw or Treated	R	R	R	R	R
Type of Treatment[1]	NA	NA	NA	NA	NA
ASBESTOS					
Chrysotile -					
Fiber Conc. (MFL)[2]	BMDL (0.0-0.5)	0.80 (0.0-2.0)	0.4 (0.0-1.0)	3.0 (1.0-5.0)	0.4 (0.0-1.0)
Detection Limit	0.50	0.4	0.2	0.2	0.1
Mass Conc. (ug/l)	BMDL	0.01	0.00	0.01	0.02
Amphibole -					
Fiber Conc. (MFL)	0.2 (0.0-0.4)	0.80 (0.0-2.0)	0.4 (0.0-1.0)	BMDL (0.0-0.2)	0.2 (0.0-0.6)
Detection Limit	0.1	0.4	0.2	0.2	0.1
Mass Conc. (ug/l)	0.47	0.04	BMDL	0.08	0.02
PHYSICAL/CHEMICAL					
Hardness (mg/l $CaCO_3$)	133.0	137.0	120.0	336.0	281.0
Alkalinity (mg/l $CaCO_3$)	100.0	96.0	94.0	264.0	242.0
pH	7.5	8.1	8.0	7.6	7.6
Turbidity (FTU)	2.8	1.0	1.0	0.41	1.3
ASTM - C500[3]	11.53	12.11	11.90	12.45	12.34
Langelier's Index[4]	-.0.43	-0.37	-0.45	0.47	0.17
Temperature (°C)	20.0	2.0	2.0	8.0	9.0

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Acton	13/03/78	G	R	Line #3	BMDL	0	0.4
	13/03/78	G	T	Line #3	BMDL	0	0.2
	13/03/78	G	R	Line #4	BMDL	0	0.4
	13/03/78	G	T	Line #4	BMDL	0	0.2
Alexandria	25/01/78	S	R	Lake Alexandria	BMDL	0	0.9
	25/01/78	S	T	WTP	BMDL	0	1.6
Ajax	15/03/78	S	R	Lake Ontario	BMDL:C	0	0.4
					0.4:A	0.0-1.0	0.4
	15/03/78	S	T	WTP	BMDL	0	0.2
Almonte	15/08/79	G	R	Town Hall	BMDL	0	0.2
	15/08/79	G	R	Works Yard	BMDL	0	0.2
Alfred	29/07/80	S	R	Ottawa River	BMDL	0	0.09
	31/07/80	S	T	Reservoir	BMDL	0	0.09
Alliston	05/04/78	G	R	Well #3	BMDL	0	1.1:C/0.4:A
	05/04/78	G	R	Well #4	BMDL	0	1.0:C/0.4:A
Alvinston	16/01/80	S	R	Sydenham River	BMDL	0	3.8:C/1.6:A
	16/01/80	S	T	WTP	BMDL	0	0.2
Amherstburg	21/01/80	S	R	Detroit River	BMDL	0	0.4
	21/01/80	S	T	WTP	BMDL	0	0.2
Ancaster	14/02/78	G	R	Well #9	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Armstrong	13/08/80	G	R	Raw well	0.8:C	0.1-1.0	0.2
					0.2:A	0.0-0.4	0.2
	13/08/80	G	T	WTP	0.57:C	0.24-0.91	0.05
					0.05:A	0.0-0.16	0.05
Arnprior	02/09/77	S	R	Madawaska River	BMDL	0	0.4:C/0.1:A
	02/09/77	S	T	WTP	BMDL	0	0.2
Arthur	30/05/79	G	R	Well #6	BMDL	0	0.2
Atikokan	17/04/78	S	R	Atikokan River	BMDL	0	0.4
	17/04/78	S	T	WTP	BMDL	0	1.2:C/0.6:A
Atwood	08/03/78	G	R	Well	BMDL	0	0.4
Aurora	03/04/78	G	R	Well	BMDL	0	1.0:C/0.4:A
	03/04/78	G	T	WTP	BMDL	0	0.2
Aylmer	28/03/78	G	R	Well #1	BMDL	0	0.8:C/0.4:A
	28/03/78	G	T	WTP #1	BMDL	0	0.4:C/0.2:A
	28/03/78	G	R	Well #3A	BMDL	0	1.1:C/0.5:A
	28/03/78	G	T	WTP #3A	BMDL	0	0.5:C/0.2:A
Ayr	17/06/79	G	T	Well #A1	BMDL	0	0.2
Baden	07/01/80	G	R	Well #1	BMDL	0	0.2
	07/01/80	G	R	Well #2	BMDL	0	0.2
	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Bala	20/02/78	S	R	Lake Muskoka	BMDL:C	0	0.4
					0.4:A	0.0-1.0	0.4
	20/02/78	S	T	WTP Pumphouse	BMDL:C	0	0.2
					0.2:A	0.0-0.6	0.2
Balmerton	25/04/78	S	R	Red Lake	BMDL	0	0.4:C/0.2:A
	25/04/78	S	T	WTP Pumphouse	BMDL	0	0.4:C/0.2:A
Bancroft	17/07/79	S	T	Clark Lake	BMDL	0	0.4
Barry's Bay	20/02/78	S	R	Kamaniskeg Lake	BMDL	0	0.2
	20/02/78	S	T	High lift	BMDL	0	0.2
	29/01/80	S	R	Kamaniskeg Lake	BMDL	0	0.2
	29/01/80	S	T	High lift	BMDL	0	0.2
Barrie	18/08/77	G	R	Well #7	BMDL	0	0.4:C/0.2:A
	18/08/77	G	T	Well #7	BMDL	0	0.6:C/0.2:A
	18/08/77	G	R	Well #5	BMDL	0	0.4:C/0.2:A
	18/08/77	G	T	Well #5	BMDL	0	0.4:C/0.2:A
Batawa	14/08/80	S	R	Trent River	BMDL	0	0.35
	14/08/80	S	T	WTP Pumphouse	BMDL	0	0.17
Bath	01/12/80	S	R	Lake Ontario	BMDL	0	0.09
	01/12/80	S	T	WTP	BMDL	0	0.09
Beachburg	06/02/80	G	R	Well	BMDL	0	0.2
	06/02/80	G	T	Reservoir	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Beachville	14/03/78	G	R	West well	BMDL	0	0.4
	14/03/78	G	T	Deep well	BMDL	0	0.2
Beaverton	06/03/78	S	R	Lake Simcoe	BMDL	0	0.4
	06/03/78	S	T	WTP Pumphouse	BMDL	0	0.2
Beeton	07/03/78	G	R	Spring	BMDL	0	0.4
	07/03/78	G	T	Dist'n system	BMDL	0	0.4
	07/03/78	G	R	Well #2	BMDL	0	1.8
	07/03/78	G	T	Dist'n system	BMDL	0	0.4
Belle River	28/03/78	S	R	Lake St. Clair	BMDL	0	0.4:C/0.2:A
	28/03/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Belleville	10/08/78	S	R	Bay of Quinte	BMDL	0	0.4
	10/08/78	S	T	WTP-Clearwell	BMDL	0	0.4
Belmont	24/01/78	G	R	Old well	BMDL	0	0.2
Bicroft	22/02/78	G	R	Cardiff well	BMDL	0	0.4
Bicroft Heights	22/02/78	S	R	Centre Lake	BMDL	0	0.4
	22/02/78	S	T	WTP	BMDL	0	0.2
Blenheim	26/07/77	S	R	Lake Erie	BMDL	0	0.5:C/0.1:A
	26/07/77	S	T	WTP	BMDL	0	0.4:C/0.1:A

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Blezard Valley	28/02/80	G	R	Wells	BMDL	0	0.2
	28/02/80	G	T	WTP	BMDL	0	0.2
Blind River	02/09/80	G	R	Well #1	BMDL	0	0.9
	02/09/80	G	T	Dist'n system	BMDL:C		
					0.16:A	0.0-0.5	0.16
Blyth	23/02/78	G	R	Well	BMDL	0	0.4
Bobcaygeon	10/04/78	S	R	Big Bob River	BMDL	0	0.2:C/0.6:A
	10/04/78	S	T	WTP	BMDL	0	0.2
Bolton	13/03/78	G	R	Well #3	BMDL	0	0.4
	13/03/78	G	T	WTP	BMDL	0	0.2
Bothwell	29/03/78	G	R	Deep well	BMDL	0	0.2
Bourget	13/02/78	G	R	Well	BMDL	0	0.2
	13/02/78	G	T	Treated basin	BMDL	0	0.2
Bowmanville	29/03/78	S	R	Lake Ontario	BMDL	0	1.0:C/0.4:A
	29/03/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Bracebridge	02/07/79	S	R	Strawberry Bay	BMDL	0	0.2
Bradford	06/04/78	G	R	Doan well	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Brantford	17/01/77	S	R	Grand River	BMDL	0	0.2
	17/01/77	S	T	WTP	BMDL	0	0.2
	30/04/86	S	T	Dist'n system	0.2:C	0.0-0.2	Not reported
					0.2:A	0.0-0.2	Not reported
	25/01/78	G	R	Well-airport	BMDL	0	0.2
	25/01/78	G	R	Tutela well	BMDL	0	0.2
	25/01/78	G	T	WTP Pumphouse	BMDL	0	0.2
Brechin	06/03/78	S	R	Lake Simcoe	BMDL	0	0.4
	06/03/78	S	T	Dist'n system	BMDL:C	0	0.2
					0.6:A	0.0-1.0	0.2
Brighton	28/02/78	G	T	WTP	BMDL	0	0.2
Brockville	01/03/78	S	R	St. Lawrence River	BMDL	0	0.2:C/0.3:A
	01/03/78	S	T	Lab. tap	BMDL	0	0.2
Brooklin	28/03/78	G	R	Well	BMDL	0	0.9:C/0.4:A
		G	T	WTP	BMDL	0	0.5:C/0.2:A
Brownsville	10/04/78	G	R	Well #3	BMDL	0	0.2
Bruce Mines	26/08/80	S	T	Lake Huron	BMDL	0	0.2
Brunner	19/04/78	G	R	Well	BMDL	0	0.4:C/0.2:A
Brussels	23/02/78	G	R	Well	BMDL	0	0.2
Burks Falls	12/08/80	G	R	Well	BMDL	0	0.2
	24/09/80	G	R	Well	BMDL	0	

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1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibres L^{-1}) Result[1]	Range	Detection Limit[1]
Burlington	14/03/78	S	R	Lake Ontario	BMDL	0	0.4
	14/03/78	S	T	WTP	BMDL	0	0.2
Cache Bay	22/09/80	S	R	Tanner Lake	BMDL	0	0.2
	22/09/80	S	T	Dist'n system	BMDL	0	0.2
Caledon East	13/03/78	G	R	Well	BMDL	0	1.0:C/0.4:A
	13/03/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Caledonia	31/01/78	G	R	Well	BMDL	0	2.4
	31/01/78	G	T	WTP	BMDL	0	0.4
Callander	03/10/83	G	R	Well 1 & 4	BMDL	0	Not reported
	03/10/83	G	T	Works Bldg.	BMDL	0	Not reported
Campbellford	28/02/78	S	R	Trent River	BMDL	0	0.4
	28/02/78	S	T	WTP	BMDL	0	0.2
Campbellville	08/12/81	G	R	Well	0.05:C	0.0-0.16	-
					BMDL:A	0	
Cannington	07/03/78	G	R	Well #3	BMDL	0	0.4
	07/03/78	G	T	WTP	BMDL	0	0.2
	07/03/78	G	R	Well #4	BMDL	0	0.4
	07/03/78	G	T	WTP	BMDL	0	0.2
Capreol	22/01/79	G	R	Well #2	BMDL	0	1.4
Carleton Place	06/09/77	S	R	Riverside Park	BMDL	0	0.6:C/0.2:A
	06/09/77	S	T	WTP	BMDL	0	0.4:C/0.2:A

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Carrville	03/04/78	G	R	Well	BMDL	0	1.0:C/0.4:A
	03/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Casselman	21/02/78	S	R	Nation River	2.0:C	0.80-4.00	0.2
					0.2:A	0.00-0.80	0.2
	21/02/78	S	T	WTP	2.0:C	0.4-4.0	0.2
					0.2:A	0.0-0.8	0.2
Cayuga	30/01/78	S	T	WTP	BMDL	0	0.2
Charlottenburgh	15/03/78	S	R	St. Lawrence River	BMDL	0	0.4
	15/03/78	S	T	WTP	2.0:C	0.8-2.0	0.2
					BMDL:A	0	0.2
	04/06/79	S	T	Dist'n-Eamon	BMDL	0	0.2
	04/06/79	S	T	Dist'n-Lalonde	BMDL	0	0.4
	04/06/79	S	T	Dist'n-Mallette	BMDL	0	0.2
	04/06/79	S	T	Dist'n-Amell	BMDL	0	0.2
Chapleau	08/10/80	S	R	Chapleau River	BMDL	0	0.35
	08/10/80	S	T	WTP	BMDL	0	0.09
	12/08/80	S	T	WTP	BMDL	0	0.09
Chatham	15/04/78	S	R	Lake Erie	BMDL	0	1.0:C/0.4:A
	03/04/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Cheney	20/02/78	G	T	Well	BMDL	0	0.2
Chesley	16/02/78	G	R	Well	BMDL	0	0.4:C/0.2:A

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result*	Range	Detection Limit
Chesterville	31/10/78	G	R	Well	BMDL	0	0.2
	31/10/78	G	T	Pump House	BMDL	0	0.4
Clarence Creek	21/02/78	G	R	Well	BMDL:C	0	0.4
					0.4:A	0.0-1.0	0.2
	21/02/78	G	T	WTP	BMDL	0	0.2
Clifford	31/01/78	G	R	Well	0.2:C	0.0-0.8	0.2
					BMDL:A	0	0.2
Clinton	09/02/78	G	R	Dist'n system	BMDL	0	0.2
Cobalt	17/11/78	S	R	Sasaginga Lake	BMDL	0	0.4:C/0.2:A
Cobden	31/08/77	S	R	Muskrate Lake	BMDL	0	0.4:C/0.2:A
	31/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Cobourg	01/03/78	S	R	Lake Ontario	6.0:C	0.0-10.0	1.0
					BMDL:A	0	1.0
	01/03/78	S	T	WTP	0.4:C	0.0-1.0	0.2
					BMDL:A	0	0.2
Cochenour	18/12/79	S	T	Pump House	BMDL	0	0.2
Cochrane	20/11/78	G	R	Well #4	BMDL	0	0.4:C/0.2:A
	20/11/78	G	T	After filter	BMDL	0	0.2
	20/11/78	G	R	Well #3	BMDL	0	4.3:C/1.8:A
Colbourne	01/03/78	S	R	Trent River	BMDL	0	0.4
	01/03/78	S	T	Pump House	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Coldwater	09/03/78	G	T	Springs	40.0:C	25.0-55.0	0.4
					BMDL:A	0	0.4
Collingwood	16/08/77	S	R	Georgian Bay	9.70:C	5.50-14.00	0.4
					BMDL:A	0	0.2
	16/08/77	S	T	Pump House	BMDL	0	0.4:C/0.2:A
	11/04/78	S	R	Georgian Bay	BMDL	0	0.2
	11/04/78	S	T	Pump House	BMDL	0	0.2
Cornwall	23/01/78	S	R	Lower St. Lawrence	BMDL	0	0.2
	23/01/78	S	T	After filters	BMDL	0	0.2
Courtland	01/02/78	G	T	Pump House	BMDL	0	0.9
Creemore	11/04/78	G	R	Springs	BMDL	0	0.2:C/0.4:A
	11/04/78	G	T	Pump House	BMDL	0	0.2:C/0.4:A
Crystal Beach	25/01/78	S	R	Lake Erie	BMDL	0	1.2
	25/01/78	S	T	After filters	BMDL	0	0.2
Deep River	29/08/77	S	R	Ottawa River	BMDL	0	0.4:C/0.2:A
	29/08/77	S	T	WTP	BMDL	0	0.6:C/0.2:A
	10/07/80	S	T	WTP	BMDL	0	0.2
	10/07/80	S	T	Hospital	BMDL	0	0.2
	10/07/80	S	T	Fire Hall	BMDL	0	0.2
	10/07/80	S	T	132 Frontenac	BMDL	0	0.2
Delhi	01/02/78	S	R	Big Creek	BMDL	0	0.2
	01/02/78	S	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Deloro	23/07/79	G	R	Well	BMDL	0	0.2
Dresden	11/04/78	S	R	Sydenham River	BMDL	0	1.7:C/6.2A
	11/04/78	S	T	Clear well	BMDL	0	0.2
Dryden	25/04/78	S	R	Wabigoon Lake	BMDL	0	1.6
	25/04/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Dundalk	06/03/78	G	R	Well	BMDL	0	0.4
	06/03/78	G	T	Dist'n system	BMDL	0	0.2
	28/02/78	G	R	Well	BMDL	0	0.2
Dunnville	03/08/77	S	R	Lake Erie	BMDL	0	0.6:C/0.2:A
	03/08/77	S	T	WTP	BMDL	0	0.2
Durham	16/02/78	G	R	Well #2	BMDL	0	0.2
Dymond Township	17/11/78	G	R	Well	BMDL	0	0.2
Ear Falls	25/04/78	S	R	English River	4.0:C	0.2-7.0	0.4
					BMDL:A	0	0.4
	25/04/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Earlton	04/09/78	G	R	Well	0.80:C	0.1-1.0	0.2
					0.20:A	0.0-0.4	0.2
	04/09/78	G	T	Pump House	0.60:C	0.3-0.9	0.05
					0.05:A	0.0-0.2	0.05

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Eganville	26/02/80	G	R	Well	BMDL	0	0.2
Egmondville	30/03/78	G	R	Well	BMDL	0	0.6:C/0.2:A
Elgin area	21/07/77	S	R	Lake Erie	BMDL	0	0.9:C/0.2:A
(St. Thomas)	21/07/77	S	T	WTP	BMDL	0	0.2:C/0.05:A
Elliot Lake	24/01/80	S	R	Elliot Lake	BMDL	0	1.0
	24/01/80	S	T	WTP	BMDL	0	0.8
Elmira	07/06/79	G	R	Well E-20	BMDL	0	0.2
	07/06/79	G	R	Well E-20	BMDL	0	0.2
Elmvale	09/03/78	G	R	Well	BMDL	0	0.4
Elora	10/01/78	G	R	Well #1	BMDL	0	0.2
	10/01/78	G	R	Well #2	BMDL	0	0.2
Embro	06/03/78	G	R	Well	BMDL	0	0.8
Emo	30/05/78	S	R	Rainy River	BMDL	0	0.4
	30/05/78	S	T	WTP	BMDL	0	0.2
Englehart	20/08/80	G	R	Well #3	BMDL	0	0.2
	20/08/80	G	R	Dist'n system	BMDL	0	0.2
Erin	03/01/80	G	R	Well #1	BMDL	0	0.4
	03/01/80	G	R	Well #2	BMDL	0	0.4

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Essex	20/07/81	S	R	Lake Erie	0.2:C	0.0-0.6	0.2
					BMDL:A	0	0.2
	20/07/81	S	T	WTP	BMDL	0	0.2
Espanola	12/02/80	S	R	Lake Apsey	BMDL	0	0.4
	12/02/80	S	T	Pump House	BMDL	0	0.2
	12/02/80	S	T	Dist'n system	BMDL	0	0.2
	12/02/80	S	T	Dist'n system	BMDL	0	0.2
Exeter	08/02/78	G	R	Well	BMDL	0	0.2
	08/02/78	G	T	Reservoir	BMDL	0	0.2
Faquier	09/01/79	S	R	Groundhog River	BMDL	0	0.4
	09/01/79	S	T	After filter	BMDL	0	0.2
Fenelon Falls	27/02/78	S	R	Cameron Lake	BMDL	0	0.3
	27/02/78	S	T	WTP	BMDL	0	0.2
Fergus	10/01/80	G	R	Well #4	BMDL	0	0.2
	10/01/80	G	R	Well #2	BMDL	0	0.2
Foleyet	02/09/80	S	R	Ivanhoe River	BMDL	0	0.17
	02/09/80	S	T	Pump House	0.23:C	0.0-0.70	0.11
					0.11:A	0.0-0.35	0.11
Forest	21/03/78	G	R	Well	BMDL	0	1.1:C/0.4:A
	21/03/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Fort Erie	05/08/77	S	R	Lake Erie	BMDL	0	0.53:C/0.26:A
	05/08/77	S	T	WTP	BMDL	0	0.53:C/0.26:A

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Fort Frances	30/05/78	S	R	Rainy River	BMDL	0	0.2
	30/05/78	S	T	WTP	BMDL	0	0.2
Frankford	30/04/79	G	R	Pump #1	BMDL	0	0.2
	30/04/79	G	R	Pump #2	BMDL	0	0.2
	30/04/79	G	T	Dist'n system	BMDL	0	0.2
	30/04/79	G	T	Dist'n system	BMDL	0	0.2
Galt	07/06/79	G	R	Well G-8	BMDL	0	0.2
	07/06/79	G	R	Well P-9	BMDL	0	0.2
Georgetown	13/03/78	G	R	Well	BMDL	0	0.4
	13/03/78	G	T	Maple Avenue	BMDL	0	0.2
	05/04/78	G	R	Wells	BMDL	0	1.0:C/0.4:A
	05/04/78	G	T	Maple Avenue	BMDL	0	0.2
	13/03/78	G	R	Well #5	BMDL	0	0.4
	13/03/78	G	T	WTP	BMDL	0	0.6:C/0.2:A
Geraldton	14/06/78	S	R	Reesor Lake	BMDL	0	0.2
	14/06/78	S	T	WTP	BMDL	0	0.2
Glencoe	10/03/78	G	R	Well	BMDL	0	0.6
Goderich	10/08/78	S	R	Lake Huron	BMDL	0	0.4:C/0.2:A
	10/08/78	S	T	WTP	BMDL	0	0.4:C/0.2:A
Gore Bay	23/05/78	S	R	Lake Huron	BMDL	0	0.2
	23/05/78	S	T	Dist'n line	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Granton	10/04/78	G	R	Well	BMDL	0	0.2
	10/04/78	G	T	WTP	BMDL	0	0.2
Gravenhurst	20/02/78	S	R	Gull Lake	BMDL	0	0.5
	20/02/78	S	T	Pump House	BMDL	0	0.2
Grimsby	24/01/78	S	R	Lake Ontario	BMDL	0	2.3
	24/01/78	S	T	WTP	BMDL	0	0.2
Guelph	24/07/79	G	R	Well - York Street	BMDL	0	0.2
	24/07/79	G	T	WTP - York Street	BMDL	0	0.2
	24/07/79	G	R	Well - Park Street	BMDL	0	0.2
	24/07/79	G	R	Well - Burkes	BMDL	0	0.2
Hagersville	30/01/78	G	R	Well	BMDL	0	0.2
	30/01/78	G	T	WTP	BMDL	0	0.2
Haileybury	29/01/80	S	R	Lake Temiskaming	BMDL	0	0.4
	29/01/80	S	T	After filter	BMDL	0	0.2
Hamilton	09/02/78	S	R	Lake Ontario	BMDL	0	2.10
	09/02/78	S	T	WTP	0.20:C	0.0-0.8	0.20
					0.20:A	0.0-0.8	0.20
Hammond	22/02/78	G	R	Well	BMDL	0	0.4
	22/02/78	G	T	WTP	BMDL	0	0.2
	22/02/78	G	R	Spring	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
		Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Hanover	02/02/78	S	R	Ruhl Lake	BMDL	0	0.2
	02/02/78	G	R	Well	BMDL	0	1.1
	02/02/78	G	T	Reservoir - well	BMDL	0	0.2
Harriston	09/03/78	G	R	Well	BMDL	0	0.4
Harrow	20/07/77	S	R	Lake Erie	BMDL	0	0.4:C/0.1:A
	20/07/77	S	T	After filter	BMDL	0	0.2:C/0.4:A
	30/05/78	S	R	Lake Erie	BMDL	0	0.6:C/0.4:A
	01/06/78	S	T	WTP	BMDL	0	0.2
Hastings	01/03/78	S	R	Trent Canal	BMDL	0	0.4
	01/03/78	S	T	WTP	BMDL	0	0.2
Havelock	01/03/78	G	R	Well #2	BMDL	0	0.4
	01/03/78	G	T	WTP	BMDL	0	0.2
	01/03/78	G	R	Well #1	BMDL	0	0.4
	01/03/78	G	T	WTP	BMDL	0	0.2
Hawkesbury	07/10/77	S	R	Ottawa River	BMDL	0	0.4
	07/10/77	S	T	WTP	BMDL	0	0.4:C/0.2:A

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Hearst	22/11/78	S	R	Mattawishkwia River	BMDL	0	0.4:C/0.2:A
	22/11/78	S	T	WTP	BMDL	0	0.2
	29/05/79	S	R	Mattawishkwia River	BMDL	0	0.2
	29/05/79	S	T	WTP	BMDL	0	0.2
	29/05/79	S	T	Dist'n system	BMDL	0	0.2
	29/05/79	S	T	Dist'n system	BMDL	0	0.4
Hensall	07/03/78	G	R	Well	BMDL	0	0.4
Hespeler	07/06/79	G	R	Well H-3	BMDL	0	0.2
	07/06/79	G	T	Well H-3	BMDL	0	0.2
	07/06/79	G	R	Well H-5	BMDL	0	0.2
Highgate	28/03/78	G	R	Well	BMDL	0	0.8:C/0.4:A
	28/03/78	G	R	Private well	BMDL	0	0.8:C/0.4:A
Hilton Beach	02/07/80		R	Communal supply	BMDL	0	0.2
Holtyre	27/08/80	G	T	Well #1	0.23:C	0.0-0.58	0.12
					BMDL:A	0	0.12
Huntsville	20/02/78	S	R	Hunter Lake	BMDL	0	0.3
	20/02/78	S	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Huron Park	30/03/78	G	R	Well	BMDL	0	0.4:C/0.2:A
	30/03/78	G	T	Reservoir	BMDL	0	0.2
Ignace	12/04/78	G	R	Well	BMDL	0	2.1:C/7.6:A
	12/04/78	G	T	Pump House	BMDL	0	0.2
Ingleside	17/10/78	S	R	Lake St. Lawrence	BMDL	0	0.2
	17/10/78	S	T	Dist'n line	BMDL	0	0.2
Ingersoll	06/02/78	G	R	Well #5	BMDL	0	0.2
	06/02/78	G	T	Well #5	BMDL	0	0.2
	06/02/78	G	R	Well #4	BMDL	0	0.2
	06/02/78	G	T	Well #4	0.60:C	0.0-1.0	0.2
					BMDL:A	0	0.2
Iroquois	30/01/78	S	T	WTP	BMDL	0	0.2
Iroquois Falls	01/08/78	S	R	Abitibi River	BMDL	0	0.2
	01/08/78	S	T	WTP	BMDL	0	0.2
	14/09/78	S	T	WTP	BMDL	0	0.2
Jarvis (Nanticoke)	28/07/77	G	R	Well	BMDL	0	0.4:C/0.2:A
	28/07/77	G	T	Pump House	BMDL	0	0.2
Kapuskasing	21/08/80	G	R	Well #1	BMDL	0	0.2
	21/08/80	G	T	WTP	BMDL	0	0.2
	21/08/80	G	R	Well #2	BMDL	0	0.2
	21/08/80	G	R	Well #3	BMDL	0	0.5
	08/09/80	G	R	Well #1	BMDL	0	0.09

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Kapuskasing (cont'd)	08/09/80	G	T	WTP	BMDL	0	0.22
	08/09/80	G	R	Well #3	BMDL	0	0.52
	02/12/80	G	R	Well #1	BMDL	0	0.17
	02/12/80	G	R	Well #2	BMDL	0	0.17
	02/12/80	G	R	Well #3	BMDL	0	0.87
Kemptville	25/07/79	G	R	Well	BMDL	0	0.2
	25/07/79	G	T	WTP	BMDL	0	0.2
Kenora	29/05/78	S	R	Lake of the Woods	BMDL	0	0.6
	29/05/78	S	T	WTP	BMDL	0	0.2
Kincardine	11/08/77	S	R	Lake Huron	BMDL	0	0.4:C/0.2:A
	11/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
King City	04/04/78	G	R	Well	BMDL	0	0.8:C/0.4:A
	04/04/78	G	T	Pump House	BMDL	0	0.5:C/0.2:A
Kingston	16/01/78	S	R	Lake Ontario	BMDL	0	0.1
	16/01/78	S	T	WTP	BMDL	0	0.1
Kingston Township	03/05/78	G	R	Well	BMDL	0	1.5:C/0.2:A
	03/05/78	G	T	After filter	BMDL	0	0.9:C/0.2:A
	03/05/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
	03/05/78	G	T	Dist'n system	BMDL	0	0.2
Kingsville	20/07/81	S	R	Lake Erie	0.2:C	0.2-0.6	0.2
					BMDL:A	0	0.2
	20/07/81	S	T	Dist'n	BMDL	0	0.1

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Kitchener	07/06/79	G	R	Well - K26	BMDL	0	0.2
	07/06/79	G	R	Well - Erb Street	BMDL	0	0.2
	07/06/79	G	R	Well - Middleton	BMDL	0	0.2
	07/06/79	G	R	Well - K70	BMDL	0	0.2
	07/06/79	G	R	Well - K21	BMDL	0	0.2
	07/06/79	G	R	Well - K50	BMDL	0	0.2
	07/06/79	G	R	Well - Parkway	BMDL	0	0.2
	07/06/79	G	R	Well - Strange Street	BMDL	0	0.2
	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	T	Dist'n system	BMDL	0	0.2
Kirkland Lake	15/11/78	S	R	Gull Lake	BMDL	0	0.2
	15/11/78	S	T	WTP	BMDL	0	0.2
	16/10/79	S	R	Gull Lake	BMDL	0	0.2
	16/10/79	S	T	WTP	BMDL	0	0.2
	16/10/79	S	T	Dist'n system	BMDL	0	0.2
	16/10/79	S	T	Dist'n system	BMDL	0	0.2
	16/10/79	S	T	Dist'n system	BMDL	0	0.2
Kleinburg	13/04/78	G	R	Well	BMDL	0	0.4
	03/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Lakefield	27/02/78	S	R	Katchewanooka River	BMDL	0	0.4
	27/02/78	S	T	WTP	BMDL	0	0.2
	23/05/79	S	R	Katchewanooka River	BMDL	0	0.2
	23/05/79	S	T	Inner clairifier	BMDL	0	0.2
	23/05/79	S	T	Outer clairifier	BMDL	0	0.4
	23/05/79	S	T	After Filter	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Lakeview (South Peel)	14/03/78	S	R	Lake Ontario	0.4:C	0.0-1.0	0.2
					0.4:A	0.0-1.0	0.2
	14/03/78	S	T	WTP	BMDL	0	0.2
Lambeth	09/05/78	G	R	Well #4	BMDL	0	1.0
	09/05/78	G	T	WTP	10.0:C	7.0-15.0	0.2
					0.2:A	0.2-0.4	0.2
	09/05/78	G	R	Well #1, 2 & 3	BMDL	0	1.0
	09/05/78	G	T	Dist'n system	BMDL	0	0.1:C/0.2:A
Lancaster	16/10/80	G	R	Well	BMDL:C	0	0.6
					0.6:A	0.0-1.92	0.2
	16/09/80	G	T	Well	BMDL	0	0.17
Lansdowne	10/08/80	G	R	Well #1	0.9:C	0.42-1.38	0.06
					1.22:A	0.53-1.91	0.06
	10/08/80	G	T	WTP	BMDL	0	0.09
	10/08/80	G	R	Well #2	BMDL	0	0.09
	10/08/80	G	T	WTP	BMDL	0	0.2
Larder Lake	03/09/80	G	R	Well	BMDL	0	0.09
Latchford	29/01/80	S	R	Bay Lake	BMDL	0	0.2
	29/01/80	S	T	WTP	BMDL	0	0.2
Lefaivre	06/09/77	S	R	Ottawa River	BMDL	0	0.4:C/0.1:A
	06/09/77	S	T	WTP	BMDL	0	0.4:C/0.1:A
Leamington	20/07/81	S	R	Lake Erie	0.2:C	0.0-0.6	0.1
					BMDL:A	0	0.1
	20/07/81	S	T	WTP	BMDL	0	0.1

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Levack (Sudbury)	16/11/78	G	R	Well #2	BMDL	0	0.2
Lincoln (Vineland)	24/01/78	S	R	Lake Ontario	BMDL	0	1.0
	24/01/78	S	T	WTP	BMDL	0	0.2
Linwood	15/05/79	G	R	Well	BMDL	0	0.2
Lindsay	27/02/78	S	R	Scugog River	BMDL	0	0.3
	27/02/78	S	T	WTP	BMDL:C	0	0.2
					0.4:A	0.0-1.0	0.2
	26/06/79	S	R	Scugog River	BMDL	0	0.2
	26/06/79	S	T	WTP	BMDL	0	0.2
	26/06/79	S	T	Dist'n system	BMDL	0	0.2
	26/06/79	S	T	Dist'n system	BMDL	0	0.2
	26/06/79	S	T	Dist'n - Richard St.	BMDL	0	0.2
	26/06/79	S	T	Dist'n - Needham Rd.	BMDL	0	0.2
Lion's Head	31/01/78	S	R	Georgian Bay	BMDL	0	0.2
	31/01/78	S	T	Dist'n system	BMDL	0	0.2
Listowel	28/02/78	G	R	Well #5	BMDL	0	0.4
	28/02/81	G	T	WTP	BMDL	0	0.2
Little Current	13/03/78	S	R	Lake Huron	BMDL	0	0.4
	13/03/78	S	T	Pump House	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
London	23/02/78	S	R	Lake Huron	BMDL	0	0.2
	23/02/78	S	T	WTP	BMDL:C	0	0.2
					0.20:A	0.0-0.6	0.2
	28/05/79	S	T	Dist'n -Huntington Dr.	BMDL	0	0.2
	28/05/79	S	T	Dist'n - Simcoe Street	BMDL	0	0.2
	28/05/79	S	T	Dist'n - Western Road	BMDL	0	0.2
Long Lac	12/06/78	S	R	Long Lac	BMDL	0	0.2
	12/06/78	S	T	Pump House	BMDL	0	0.2
Long Sault	31/01/78	S	T	St. Lawrence River	BMDL	0	0.2
L'Original	12/02/80	G	R	Well #1	BMDL	0	0.4
	12/02/80	G	R	Well #2	BMDL	0	0.2
Lucan	15/03/78	G	R	Well	BMDL	0	0.4
Lucknow	15/02/78	G	R	Well	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
MacTier	24/05/79	S	R	Stewart Lake	BMDL	0	1.0
	24/05/79	S	T	Pump House	BMDL	0	0.4
	24/05/79	S	T	Dist'n - Twp. garage	BMDL	0	0.4
	24/05/79	S	T	Dist'n - G.B. Beacon	2.0:C	0.0-5.0	0.2
					BMDL:A	0	0.2
	24/05/79	S	T	Dist'n - James Street	340:C	260.0-420.0	0.60
					2.0:A	0.0-5.0	0.60
	05/02/80	S	T	Dist'n - James Street	35:C	25.0-45.0	0.4
					0.4:A	0.0-1.0	0.4
Madoc	08/10/80	G	R	Well	BMDL	0	0.9
	08/10/80	G	T	Pump House	BMDL:C	0	0.08
					0.24:A	0.0-0.52	0.08
Manitouwadge	17/08/78	G	R	Well #1	BMDL	0	0.2
	17/08/78	G	R	Well #4	BMDL	0	0.2
Manitowaning	18/11/80		R		BMDL	0	0.09
	18/11/80		T		BMDL	0	0.09
Maple	03/04/78	G	R	Well	BMDL	0	1.0:C/0.4AA
	03/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Marathon	17/08/78	G	R	Well #1	BMDL	0	0.2
	17/08/78	G	R	Well #3	BMDL	0	0.2
Markdale	06/03/78	G	R	Well	BMDL	0	0.4
	06/03/78	G	T	Dist'n	0.2:C	0.0-0.4	0.2
					BMDL:A	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Marmora	23/07/79	S	R	Crowe River	BMDL	0	0.4
	23/07/79	S	T	WTP	BMDL	0	0.2
Mary Hill	07/06/79	G	R	Well	BMDL	0	0.2
Massey	20/04/78	S	R	Aux. Sauble River	BMDL	0	0.5:C/0.2:A
	20/04/78	S	T	Pump House	BMDL	0	0.5:C/0.2:A
Matachewan	14/11/78	G	R	Well	0.6:C	0.0-1.0	0.2
					BMDL:A	0	0.2
	14/11/78	G	T	WTP	0.6:C	0.4-1.0	0.2
					0.2:A	0.0-0.2	0.2
	29/05/79	G	T	Pump House	BMDL	0	0.2
	29/05/79	G	T	Dist'n - Dale Street	0.8:C	0.0-2.0	0.2
					BMDL:A	0	0.2
	29/05/79	G	T	Dist'n - Matheson St.	0.4:C	0.0-0.8	0.2
					BMDL:A	0	0.2
Matheson	16/11/78	S	R	Belleek Lake	BMDL	0	0.2
	16/11/78	S	T	Pump House	BMDL	0	0.2
	16/10/79	S	R	Belleek Lake	BMDL	0	0.2
Mattawa	06/08/80	G	R	Well	BMDL	0	0.09
Meaford	25/01/78	S	R	Georgian Bay	BMDL	0	0.2
	25/01/78	S	T	After filters	BMDL	0	0.2
Merrickville	11/12/78	G	T	Well #4	BMDL	0	0.2
	11/12/78	G	T	Well #3	BMDL	0	1.9

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Midland	15/03/78	G	R	Well #1, 2 & 3	0.4:C	0.0-1.0	0.4
					BMDL:A	0	0.4
	15/03/78	G	T	Well #1, 2 & 3	BMDL	0	0.2
	15/03/78	G	R	Well #7	BMDL	0	0.4
Mildmay	16/02/78	G	R	Well	BMDL	0	0.2
Millbrook	27/02/78	G	R	Well	BMDL	0	0.4
	27/02/78	G	T	Pump House	BMDL	0	0.2
Milton	13/03/78	G	R	Well #2	BMDL	0	0.4
	13/03/78	G	R	Well #1	BMDL	0	0.4
Milverton	07/03/78	G	R	Well #5	BMDL	0	0.4
	07/03/78	G	T	Dist'n system	BMDL	0	0.2
Minden	23/02/78	G	R	Well	0.6:C	0.0-1.0	0.2
					BMDL:A	0	0.2
	23/02/78	G	T	Dist'n system	BMDL	0	0.2
	23/05/79	G	R	Well	BMDL	0	0.2
	23/05/79	G	T	Dist'n system	BMDL	0	0.2
	23/05/79	G	T	Dist'n - school	0.8:C	0.2-1.0	0.2
					BMDL:A	0	0.2
	23/05/79	G	T	Dist'n - fountain	0.2:C	0.0-0.6	0.2
					BMDL:A	0	0.2
	23/05/79	G	T	Dist'n - Water Street	BMDL	0	0.2
	23/05/79	G	T	Dist'n - Red Cross	BMDL	0	0.2
Mitchell	06/03/78	G	R	Well	BMDL	0	0.4
	06/03/78	G	T	After filter	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Mitchell's Bay	12/04/78	S	R	Lake St. Clair	BMDL	0	4.6:C/2.3:A
	19/04/78	S	T	After filters	BMDL	0	0.5:C/0.2:A
Morrisburg	30/01/78	S	R	St. Lawrence River	100.0:C	65.0-140.0	0.9
					BMDL:A	0	0.9
	30/01/78	S	T	WTP	BMDL	0	0.2
Mt. Elgin	22/02/78	G	R	Well #2	BMDL	0	0.4
Mount Forest	22/02/78	G	R	Well	BMDL	0	0.4
Nanticoke	06/08/81	S	R	Lake Erie	BMDL	0	0.2
	06/08/81	S	T	WTP	BMDL	0	0.2
Napanee	30/01/78	S	R	Napanee River	35.0:C	15.0-50.0	1.60
					2.0:A	0.0-5.0	1.60
	30/01/78	S	T	WTP	BMDL	0	1.0
Newcastle	29/03/78	G	R	Well #1	BMDL	0	1.0:C/0.4:A
	29/03/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
New Liskeard	16/08/78	G	R	Well #3	BMDL	0	0.6:C/0.2:A
	16/08/78	G	T	WTP	BMDL	0	0.2
	16/08/78	G	R	Well #4	BMDL	0	0.4:C/0.2:A
Newmarket	03/04/78	G	R	Well #2	BMDL	0	0.8:C/0.4:A
	03/04/78	G	T	WTP	BMDL	0	0.2
	05/04/78	G	R	Well #2	no data	no data	no data
	05/04/78	G	T	WTP	no data	no data	no data

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Newmarket (cont'd)	03/04/78	G	R	Well #9	BMDL	0	0.2
	03/04/78	G	T	Well #9	BMDL	0	0.2
Niagara Falls	24/01/78	S	R	Welland River	BMDL	0	1.8
	24/01/78	S	T	WTP	BMDL	0	0.2
Niagara-on-the-Lake	15/08/77	G & S	R	Niagara River & wells	0.3:C	0.0-0.5	0.2
					BMDL:A	0	0.1
	15/08/77	G & S	T	WTP	BMDL	0	0.1
	24/01/78	G	R	Well #2	no data	no data	no data
	24/01/78	G	R	Well #4	no data	no data	no data
	24/01/78	G	T	Wells #2 & 4	BMDL	0	0.2
	24/01/78	G	T	Wells #6 & 7	BMDL	0	0.2
Nickle Centre - Falconbridge	29/01/79	G	R	Well	BMDL	0	0.2
Nickle Centre - Garson	19/09/78	G	R	Well #3	BMDL	0	0.2
	19/09/78	G	R	Well #4	BMDL	0	0.2
Nobel	29/01/80	S	R	Parry Sound	BMDL	0	0.2
	29/01/80	S	T	Pump House	BMDL	0	0.2
Nobleton	04/04/78	G	R	Well	BMDL	0	0.8:C/0.4:A
	04/04/78	G	T	Pump House	BMDL	0	0.6:C/0.2:A
North Bay	05/12/77	S	R	Trout Lake	BMDL	0	0.2
	05/12/77	S	T	WTP	BMDL:C	0	0.2
					0.2:A	0.0-0.6	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
North Dorchester	23/01/78	G	R	Well #1	BMDL	0	0.2
	23/01/78	G	T	WTP	BMDL	0	0.2
	24/05/78	G	R	Well #2	dBMDL	0	0.2
	24/05/78	G	T	WTP	BMDL	0	0.2
	16/01/80	G	R	Well #1	BMDL	0	0.2
	16/01/80	G	R	Well #2	BMDL	0	0.2
Norwich	11/04/78	G	R	Well #1	BMDL	0	0.2
Norwood	01/03/78	G	R	Wells	BMDL	0	0.4
Oak Ridges (Richmond Hill)	04/04/78	G	R	Well #2	BMDL	0	1.0:C/0.4:A
	04/04/78	G	T	Pump House	BMDL	0	1.8
Oakville	14/03/78	S	R	Lake Ontario	BMDL	0	0.4
	14/03/78	S	T	WTP	BMDL	0	0.2
Odessa	30/01/80	S	R	Millhaven Creek	BMDL	0	0.4
Oil Springs	21/03/78	G	R	Well	BMDL	0	0.8:C/0.4:A
	21/03/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Onaping	26/10/78	G	T	Well	BMDL	0	0.2
Orangeville	16/05/79	G	R	Well #2	BMDL	0	0.2
	16/05/79	G	R	Well #3	BMDL	0	0.2
	16/05/79	G	R	Well #4	BMDL	0	0.2
	16/05/79	G	R	Well #5	BMDL	0	0.2
	16/05/79	G	R	Well #6	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Crysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Orillia	17/08/77	S	R	Lake Couchiching	14.0:C	-	0.4
					BMDL:A	0	0.1
	17/08/77	S	T	WTP	BMDL	0	0.5:C/0.1:A
	17/08/77	G	R	Well #2	BMDL	0	0.4:C/0.1:A
	13/10/77	S	R	Lake Couchiching	0.6:C	0.0-1.0	0.4
					BMDL:A	0	0.2
Orono	28/03/78	G	R	Well	BMDL	0	1.0:C/0.4:A
Oshawa	15/03/78	S	R	Lake Ontario	BMDL	0	0.4
	15/03/78	S	T	WTP	BMDL	0	0.2
Oster	03/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Ottawa (Brittania)	14/09/77	S	R	Ottawa River	BMDL	0	0.4:C/0.1:A
	04/09/77	S	T	WTP	BMDL	0	0.4:C/0.1:A
	05/07/79	S	R	Ottawa River	BMDL	0	0.8
	05/07/79	S	T	WTP	BMDL	0	0.2
Ottawa (Lemieux)	05/09/77	S	R	Ottawa River	BMDL	0	0.4:C/0.1:A
	05/09/77	S	T	WTP	BMDL	0	0.5:C/0.1:A
	05/07/79	S	R	Ottawa River	BMDL	0	0.8
	15/10/79	S	T	WTP	BMDL	0	0.2
Otterville	08/03/78	G	R	Well #2	BMDL	0	0.4

1. Result or detection limit followed by :A or :C denotes Amphibole or Crysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Owen Sound	12/08/77	G	R	Spring	BMDL	0	0.4:C/0.2:A
	12/08/77	G	T	WTP	BMDL	0	0.4:C/0.2:A
	23/01/78	G	R	Spring	BMDL	0	0.2
	23/01/78	G	T	WTP	BMDL	0	0.2
Palmerston	03/01/80	G	R	Well	BMDL	0	0.2
Paincourt	30/03/78	G	R	Well	BMDL	0	0.6:C/0.2:A
Paisley	08/02/78	S	R	Teeswater River	BMDL	0	0.2
	08/02/78	S	T	Clear well	BMDL	0	0.2
Paris	06/02/78	G	R	Telfer well	BMDL:C	0	0.2
					0.2:A	0.0-0.8	0.2
	06/02/78	G	T	WTP	BMDL	0	0.2
	06/02/78	G	R	Well	BMDL	0	0.2
	06/02/78	G	T	WTP	BMDL	0	0.2
Parry Sound	29/08/77	S	R	Georgian Bay	0.8:C	0.0-1.4	0.4
					BMDL:A	0	0.2
	29/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Pembroke	31/08/77	S	R	Ottawa River	BMDL	0	0.4:C/0.2:A
	31/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
	11/07/80	S	T	Dist'n - WTP	BMDL	0	0.09
	11/07/80	S	T	Dist'n - Kinsman	BMDL	0	0.09
	11/07/80	S	T	Dist'n - Ciroux	0.06:C	0.0-0.17	0.05
					BMDL:A	0	0.05
	11/07/80	S	T	Dist'n - Gordon	BMDL	0	0.09

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Perth	01/02/80	G	R	Well	BMDL	0	0.2
	01/02/80	G	T	WTP	BMDL	0	0.2
Petawawa	10/07/80	S	T	Dist'n - Works	BMDL	0	0.09
	10/07/80	S	T	Dist'n - Dornan	BMDL	0	0.09
	10/07/80	S	T	Dist'n - Pine Place	BMDL	0	0.09
	10/07/80	S	T	Dist'n - WPCP	BMDL	0	0.05
Penetang	11/04/78	G	R	Well	BMDL	0	0.2
Peterborough	28/02/78	S	R	Otonabee River	BMDL	0	0.3
	28/02/78	S	T	WTP	BMDL	0	0.2
Pickering	15/03/78	S	R	Lake Ontario	BMDL	0	0.4
	15/03/78	S	T	WTP	BMDL	0	0.2
Pickle Lake	11/04/78	G	R	Well	BMDL	0	0.2
	11/04/78	G	T	Pump House	BMDL	0	0.2
Petrolia	24/01/78	S	R	Lake Huron	BMDL	0	0.2
	24/01/78	S	T	WTP	BMDL	0	0.2
	29/04/80	S	R	Lake Huron	BMDL	0	0.19
	29/04/80	S	T	Dist'n system	BMDL	0	0.2
Picton	17/01/78	S	R	Bay of Quinte	BMDL	0	0.2
	17/01/78	S	T	WTP	BMDL	0	0.2
Pittsburgh	02/09/80	G		no data	no data	no data	no data

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Port Carling	21/02/78	S	R	Indian River	BMDL	0	0.2
	21/02/78	S	T	WTP	BMDL	0	0.2
Port Colbourne	04/08/77	S	R	Welland Canal	BMDL	0	1.0:C/0.25:A
	04/08/77	S	T	WTP	BMDL	0	0.5:C/0.25:A
Port Dover (see Nanticoke)							
Port Elgin	11/08/77	S	R	Lake Huron	BMDL	0	0.4:C/0.2:A
	11/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Port Hope	28/02/78	S	R	Lake Ontario	BMDL	0	0.4
	28/02/78	S	T	WTP	BMDL	0	0.2
Port McNichol	17/08/77	S	R	Georgian Bay	BMDL:C	0	0.4
					0.2:A	0.0-0.2	0.2
	17/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Port Perry	16/03/78	G	R	Well	BMDL:C	0	0.4
					0.4:A	0.0-1.0	0.4
	16/03/78	G	T	Well	BMDL	0	0.2
Port Robinson (Thorold)	24/01/78	S	R	Welland Ship Canal	BMDL	0	1.9
	24/01/78	S	T	Dist'n - PUC	BMDL	0	0.3
Port Rowan	02/08/77	S	R	Lake Erie	BMDL	0	0.4:C/0.2:A
	02/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Port Stanley	24/01/78	S	T	After filter	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Powassan	03/03/83	G	R	Well	BMDL	0	0.2
	03/03/83	G	T	Well	BMDL	0	0.1
Prescott	31/01/78	S	R	St. Lawrence River	BMDL	0	0.2
	31/01/78	S	T	WTP	BMDL	0	0.2
Preston	07/01/80	G	R	Well #2	BMDL	0	0.2
	07/01/80	G	R	Well #9	BMDL	0	0.2
	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	T	Well	BMDL	0	0.2
Ramore	08/01/78	G	R	Well	BMDL	0	0.2
Rainy River	30/05/78	S	R	Rainy River	BMDL	0	0.4
	30/05/78	S	T	WTP	BMDL	0	0.2
Red Lake	25/04/78	S	R	Red Lake	BMDL	0	0.5:C/0.2:A
	25/04/78	S	T	WTP	BMDL	0	0.5:C/0.2:A
Red Rock	18/08/78	S	R	Lake Superior	BMDL	0	0.2
	18/08/78	S	T	WTP	BMDL	0	0.2
Renfrew	01/09/77	S	T	WTP	BMDL	0	0.2
	11/02/80	S	R	Bonnchere River	BMDL	0	0.2
	11/02/80	S	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Richmond Hill	30/03/78	G	R	Well	BMDL	0	0.8:C/0.4:C
	30/03/78	G	T	Pump House	BMDL	0	0.4:C/0.2:A
	03/04/78	G	T	Pump House	BMDL	0	1.0:C/0.4:A
Ridgetown	25/04/78	G	R	Aerator	BMDL	0	0.2
Ripley	20/02/78	G	R	Well	BMDL	0	0.2
Rockland	06/09/77	S	R	Ottawa River	BMDL	0	0.4:C/0.2:A
	06/09/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
	15/08/78	S	R	Ottawa River	BMDL	0.4	0.4
	15/08/78	S	T	WTP	BMDL	0	0.2
	15/08/78	S	T	Dist'n	BMDL	0	0.2
Sarnia	08/08/77	S	R	Lake Huron	BMDL	0	0.4:C/0.2:A
	08/08/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
	28/02/78	S	R	Lake Huron	BMDL	0	0.4
	14/08/78	S	T	WTP	BMDL	0	0.4
Sault Ste. Marie	14/12/77	G	R	Wells - White Pines	BMDL	0	0.1
	14/12/77	G	T	WTP	BMDL	0	0.2
	14/12/77	S	R	St. Mary's River	BMDL	0	0.1
	14/12/77	S	T	Pump House	BMDL	0	0.2
Schomberg	05/04/78	G	R	Well	BMDL	0	1.0:C/0.4:A
Schreiber	30/05/78	S	T	Cooks Lake	BMDL	0	0.2
Seaforth	09/02/78	G	T	Well - after pump	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
		Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Serpent River	27/07/78	S	R	Serpent River	BMDL	0	0.2
	27/07/78	S	T	Pump House	BMDL	0	0.2
Sharon (Holland Landing)	03/04/78	G	R	Well	BMDL	0	0.8:C/0.4:A
	03/04/78	G	T	Pump House	BMDL	0	0.4:C/0.2:A
Shelburne	15/01/80	G	R	Well #1	BMDL	0	0.2
	15/01/80	G	R	Well #2	BMDL	0	0.2
	15/01/80	G	R	Well #3	BMDL	0	0.2
Simcoe	31/01/78	G	R	Wells	BMDL	0	0.2
	31/01/78	G	T	Cedar Street	BMDL	0	0.2
	31/01/78	G	T	Dist'n - Cedar Street	BMDL	0	0.2
Sioux Lookout	29/05/79	S	R	Pelican Lake	BMDL	0	1.7
	29/05/79	S	T	Pump House	BMDL	0	0.2
	29/05/79	S	T	Dist'n - WPCP	BMDL	0	0.2
Smith Falls	08/09/77	S	R	Ottawa River	BMDL	0	0.4:C/0.2:A
	08/09/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
Smooth Rock Falls	02/08/78	S	R	Mattagami River	BMDL	0	0.4
	02/08/78	S	T	WTP	BMDL	0	0.2
Southampton	07/01/80	S	R	Lake Huron	BMDL	0	0.4
	07/01/80	S	T	WTP	BMDL	0	0.4

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
South River	24/09/80	G	R	Well	BMDL:C	0	0.17
					0.17:A	0.0-0.56	0.17
	24/09/80	G	T	Dist'n - firehall	BMDL	0	0.17
Spanish	07/07/80	-	-	D-1	BMDL	0	0.2
Springdale (Markham)	03/04/78	G	R	Well	BMDL	0	0.8:C/0.4:A
St. Catharines (Decew)	24/01/78	S	R	Welland Ship Canal	BMDL	0	0.2
	24/01/78	S	T	WTP	BMDL	0	0.2
St. George	07/03/78	G	R	Well	BMDL	0	0.4
St. Jacobs (Waterloo)	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	T	WTP	BMDL	0	0.2
St. Isidore de Prescott	06/02/78	G	R	Well	0.2:C	0.0-0.8	0.2
					BMDL:A	0	0.2
St. Mary's	27/02/78	G	R	Well #1	BMDL	0	0.4
	27/02/78	G	T	WTP	BMDL	0	0.2
St. Pascal	20/02/78	S	R	Spring fed pond	210.0:C	150.0-270.0	1.4
					BMDL:A	0	1.4
	20/02/78	S	T	WTP	BMDL	0	0.4
St. Williams	29/01/80	G	R	Well	BMDL	0	0.2
	29/01/80	G	T	WTP	BMDL	0	0.2
	29/01/80	G	R	Auxillary well	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Stayner	11/04/78	G	R	Well	BMDL	0	0.2
	11/04/78	G	T	Reservoir	3.0:C	2.0-4.0	0.2
					BMDL:A	0	0.2
Stirling	11/08/80	G	R	Old well	BMDL	0	0.2
	11/08/80	G	R	New well	BMDL	0	0.2
Stoney Point	15/05/78	S	R	Lake St. Clair	BMDL	0	0.8
	15/05/78	S	T	After filter	BMDL	0	0.2
Stouffville	04/04/78	G	R	Well	BMDL	0	1.0:C/0.4:A
	04/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Stratford	18/04/78	G	R	Well	BMDL	0	0.4:C/0.2:A
	18/04/78	G	T	Well	BMDL	0	0.5:C/0.2:A
Strathroy	16/03/78	G	R	Pump House	BMDL:C	0	0.4
					0.4:A	0.0-1.0	0.4
Sturgeon Falls	21/02/78	S	R	Sturgeon River	BMDL	0	0.4
	21/02/78	S	T	WTP	BMDL	0	0.2
Sudbury	21/11/78	S	R	Ramsey Lake	BMDL	0	0.2
	21/11/78	S	T	Pump House	BMDL	0	0.2
	07/11/78	S	R	Wanapetei River	BMDL	0	0.4
	07/11/78	S	T	WTP	BMDL	0	0.2
Sunderland	07/03/78	G	R	Well	BMDL	0	0.4
Sunnyside (Tay)	15/03/78	G	R	Well	BMDL	0	0.4

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Sutton	08/03/78	S	R	Lake Simcoe	BMDL	0	0.4
	08/03/78	S	T	Pump House	BMDL	0	0.2
Swastika (Kirkland Lake)	07/08/80	S	R	Blanche River	BMDL	0	0.4
	07/08/80	S	T	WTP	BMDL	0	0.2
Tara	01/03/78	G	R	Well	BMDL	0	0.4
Tavistock	21/03/78	G	R	Well	BMDL	0	2.5:C/1.0:A
Teeswater	15/02/78	G	R	Well	BMDL	0	0.2
Temagami	17/11/78	S	R	Lake Temagami	BMDL	0	1.1:C/0.4:A
	17/11/78	S	T	Pump House	BMDL	0	0.4:C/0.2:A
Terrace Bay	17/08/78	S	R	Lake Superior	BMDL	0	0.2
	17/08/78	S	T	WTP	BMDL	0	0.2
Thamesford	24/04/78	G	R	Well	BMDL	0	0.4:C/0.2:A
	24/04/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Thedford	30/03/78	G	T	WTP	BMDL	0	0.4:C/0.2:A
Thessalon	04/01/80	No data					
Thornbury	25/01/78	S	R	Nottawasaga Bay	BMDL	0	0.2
	25/01/78	S	T	WTP	BMDL	0	0.2
Thorne	06/08/80	S	R	Pond	BMDL	0	0.35
	06/08/80	S	T	WTP	BMDL	0	1.74

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Thunder Bay (Bare Point)	28/06/78	S	R	Lake Superior	BMDL	0	0.2
	28/06/78	S	T	WTP	BMDL:C	0	0.2
					0.4:A	0.0-1.0	0.2
	15/03/78	S	T	WTP	BMDL	0	0.2
	25/09/78	S	R	Lake Superior	BMDL:C	0	0.2
					0.2:A	0.0-0.6	0.2
	15/03/78	S	T	WTP	BMDL	0	0.2
	25/09/78	S	T	WTP	BMDL	0	0.2
	03/01/79	S	R	Lake Superior	BMDL:C	0	0.2
					0.2:A	0.0-0.4	0.2
	03/01/79	S	T	WTP	BMDL:C	0	0.2
					0.8:A	0.2-1.0	0.2
	03/01/79	S	T	WTP	BMDL	0	0.2
	29/05/79	S	R	Lake Superior	BMDL	0	0.2
	29/05/79	S	T	WTP	BMDL	0	0.2
	29/05/79	S	T	Dist'n - Red River Rd.	BMDL	0	0.2
	29/05/79	S	T	Dist'n - Hodder Ave.	BMDL	0	0.2
	31/07/79	S	T	WTP	0.6:C	0.0-1.0	0.2
					BMDL:A	0	0.2
	16/10/79	S	R	Lake Superior	BMDL	0	0.2
	16/10/79	S	T	WTP	0.6:C	0.0-1.0	0.2
					0.2:A	0.0-0.4	0.2
	16/10/79	S	T	Dist'n - Hodder Ave.	BMDL	0	0.2
	16/10/79	S	T	Dist'n - Red River Rd.	BMDL	0	0.2
	30/04/80	S	R	Lake Superior	BMDL	0	0.2
	30/04/80	S	T	WTP	BMDL	0	0.2
(Loch Lomond)	15/03/78	S	R	Loch Lomond	BMDL	0	0.4
	15/03/78	S	T	WTP	BMDL	0	0.2
	27/06/78	S	R	Loch Lomond	BMDL	0	0.2
	27/06/78	S	T	WTP	BMDL	0	0.2
	25/09/78	S	R	Loch Lomond	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Thunder Bay (Loch Lomond) (cont'd)	25/09/78	S	T	WTP	BMDL	0	0.2
	03/01/79	S	R	Loch Lomond	BMDL	0	0.2
	03/01/79	S	T	WTP	BMDL	0	0.2
	31/07/79	S	R	Loch Lomond	BMDL	0	0.2
	31/07/79	S	T	WTP	BMDL	0	0.2
Thornhill	30/03/78	G	R	Well	BMDL	0	0.4
	30/03/78	G	T	Pump House	BMDL	0	0.2
Thorold (see Pt. Robinson)							
Tilbury	11/05/78	S	R	Lake St. Clair	BMDL	0	6.8:C/1.9:A
	11/05/78	S	T	After filter	BMDL	0	0.4:C/0.1:A
Timmins	20/09/77	S	R	Mattagami River	BMDL	0	0.4:C/0.2:A
	20/09/77	S	T	WTP	BMDL	0	0.4:C/0.2:A
	16/05/78	S	R	Mattagami River	BMDL	0	1.0:C/0.8:A
	16/05/78	S	T	WTP	BMDL	0	0.2
	10/03/81	G	R	Tisdale - Well #1	BMDL	0	0.9
	26/08/80	G	T	Tisdale - Reservoir	0.3:C	0.0-0.66	0.07
					0.37:A	0.06-0.68	0.07
Tillsonburg	03/05/78	G	R	Well #7	BMDL	0	1.3:C/0.2:A
	03/05/78	G	T	WTP	BMDL	0	1.0:C/0.2:A
Tiverton	20/02/78	G	R	Well	BMDL:C	0	0.5
					1.0:A	0.0-2.0	0.5

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Toronto	16/07/79	S	R	Island - intake	0.17:C	0.0-0.43	0.09
					BMDL:A	0	0.09
	16/07/79	S	T	Island - input	BMDL	0	0.09
	24/07/80	S	R	Island - intake	BMDL	0	0.09
	24/07/80	S	T	Island - output	BMDL	0	0.09
	10/10/79	S	R	Easterly - intake	BMDL	0	0.2
	17/10/79	S	R	Easterly - intake	BMDL	0	0.2
	10/09/80	S	R	Easterly - intake	0.17:C	0.0-0.43	0.09
					BMDL:A	0	0.09
	10/09/80	S	T	Easterly - output	BMDL	0	0.09
	28/03/78	S	R	R. L. Clark - intake	1.0:C	0.0-2.0	0.80
					0.4:A	0.0-1.0	0.2
	28/03/78	S	T	R. L. Clark - output	0.6:C	0.0-1.0	0.5
					0.2:A	0.0-0.6	0.1
	16/07/80	S	R	R. L. Clark - intake	1.52:C	0.0-3.91	0.51
					BMDL:A	0	0.51
	16/07/80	S	T	R. L. Clark - output	BMDL	0	0.06
	25/08/80	S	R	R. L. Clark - intake	BMDL	0	0.2
	25/08/80	S	T	R. L. Clark - output	BMDL	0	0.2
	10/09/80	S	T	Ellesmere Reservoir	BMDL	0	0.09
	08/09/80	S	T	St. Clair Reservoir	BMDL	0	0.09
	08/09/80	S	T	Richview Reservoir	BMDL	0	0.09
	08/09/80	S	T	Rosehill Reservoir	BMDL	0	0.09
	29/03/78	S	R	R. C. Harris - intake	BMDL	0	0.8:C/0.3:A
	29/03/78	S	T	R. C. Harris - output	BMDL:C	0	0.4
					0.2:A	0.0-0.6	0.2
	16/07/80	S	R	R. C. Harris - intake	0.17:C	0.0-0.43	0.09
					BMDL:A	0	0.09
	16/07/80	S	T	R. C. Harris - output	BMDL	0	0.06

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Toronto (cont'd)	23/07/80	S	R	R. C. Harris - intake	BMDL	0	0.09
	23/07/80	S	T	R. C. Harris - output	BMDL	0	0.09
	29/03/78	S	T	Scarborough Pumping Station	BMDL	0	0.4:C/0.2:A
Tottenham	08/03/78	G	R	Well	BMDL	0	0.4
	08/03/78	G	T	WTP	BMDL	0	0.2
Trenton	24/07/79	S	R	Trent River	BMDL	0	0.2
	24/07/79	S	T	Pump House	BMDL	0	0.2
	11/08/80	S	R	Trent River	BMDL:C	0	1.74
					1.74:A	0.00-5.57	1.74
	11/08/80	S	T	WTP	BMDL	0	0.17
Tweed	11/08/80	G	R	Main Well	BMDL	0	0.17
	11/08/80	G	R	Meraw Well	BMDL	0	0.09
Unionville	03/04/78	S	T	Toronto supply	BMDL	0	0.4
Union	20/07/77	S	R	Lake Erie	1.0:C	0.0-2.0	0.4
					0.2:A	0.0-0.4	0.1
	20/07/77	S	T	WTP	BMDL	0	0.2:C/0.4:A
	09/08/77	S	T	Dist'n - Warren Ave.	BMDL	0	0.4:C/0.2:A
	09/08/77	S	T	Dist'n - Robson Rd.	BMDL	0	0.4:C/0.2:A
Uxbridge	16/03/78	G	R	Well #1	BMDL	0	0.4
	16/03/78	G	T	Pump House	BMDL	0	0.2
	16/03/78	G	R	Well #2	BMDL	0	0.4
	16/03/78	G	T	Pump House	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Vankleek Hill	13/02/80	G	R	Well #1	BMDL	0	0.2
	13/02/80	G	R	Well #2	BMDL	0	0.2
	13/02/80	G	R	Well #3	BMDL	0	0.2
Verner	15/01/80	S	R	Veuve River	BMDL:C	0	0.35
					0.35:A	0.00-1.11	0.35
	15/01/80	S	T	WTP	BMDL:C	0	0.09
					0.17:A	0.0-0.56	0.09
Victoria Harbour	11/04/78	S	R	Georgian Bay	BMDL	0	0.2
	11/04/78	S	T	Pump House	BMDL	0	0.2
Vineland	25/01/78	S	R	Lake Ontario	BMDL	0	1.0
	25/01/78	S	T	WTP	BMDL	0	0.2
Virginiatown	03/09/80	S	R	Larder Lake	BMDL	0	0.09
	03/09/80	S	T	WTP	BMDL	0	0.09
Wabaushene	12/04/78	S	R	Georgian Bay	BMDL	0	2.0
	12/04/78	S	T	Pump House	BMDL	0	0.2
Walden	22/02/78	S	R	Vermillion River	BMDL	0	0.4
	22/02/78	S	T	WTP	BMDL	0	0.2
Walkerton	01/03/78	G	R	Well #1 & 2	BMDL	0	0.4
	01/03/78	G	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Crysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Walkerton (cont'd)	01/03/78	G	R	Well #3	BMDL	0	0.4
	01/03/78	G	T	WTP	BMDL	0	0.4
Wallaceburg	12/04/78	S	R	Chenal Ecarte	BMDL	0	0.4
	12/04/78	S	T	After filters	BMDL	0	0.2
Wallace (Gowanstown)	08/03/78	G	R	Well	BMDL	0	0.4
	08/03/78	G	T	WTP	BMDL	0	0.4
Wanapetei	07/11/78	S	R	Wanapetei	BMDL	0	0.4
	07/11/78	S	T	WTP	BMDL	0	0.2
Warkworth	28/02/78	S	R	Mill Creek	BMDL	0	0.4
	28/02/78	S	T	WTP	BMDL	0	0.2
Warren	04/09/80	G	R	Well	BMDL	0	0.09
	04/09/80	G	T	WTP	BMDL	0	0.2
	15/10/80	G	R	Well	BMDL	0	0.09
	15/10/80	G	T	WTP	BMDL	0	0.09
Waterford (Nanticoke)	31/01/78	G	R	Well	BMDL	0	0.2
	31/01/78	G	T	WTP	BMDL	0	0.2
	31/01/78	G	R	Deer Park	0.2:C	0.0-0.6	0.2
					BMDL:A	0	0.2
	31/01/78	G	T	WTP	BMDL	0	0.2
Wawa	29/04/78	S	R	Wawa Lake	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

		SAMPLE DESCRIPTION			ASBESTOS COUNT (10^6 fibers L^{-1})		
Municipality	Date Sampled	Surface or Ground	Raw or Treated	General/Source	Result[1]	Range	Detection Limit[1]
Waterloo	25/01/78	G	R	Well	BMDL:C	0	0.2
					0.2:A	0.0-0.8	0.2
	07/06/79	G	R	Well	BMDL	0	0.2
	07/06/79	G	R	William Street	BMDL	0	0.2
Wellington	24/02/80	G	R	Well #4	BMDL	0	0.2
	24/02/80	G	T	Pump House	BMDL	0	0.2
	24/02/80	G	T	Pump House	BMDL	0	0.2
Wendover	06/02/78	S	T	Ottawa River	BMDL	0	0.2
West Lincoln	25/01/78	G	R	Well	BMDL	0	0.2
(Smithville)	25/01/78	G	T	WTP	BMDL	0	0.2
West Lorne	27/07/77	G	R	Well	BMDL:C	0	0.4
					0.2:A	0.0-0.4	0.21
	27/07/77	G	T	WTP	BMDL		0.5:C/0.1:A
Westport	12/08/80	G	R	Well #1	BMDL	0	0.2
	12/08/80	G	T	WTP	BMDL	0	0.09
	12/08/80	G	R	Well #2	BMDL	0	0.09
	12/08/80	G	T	WTP	BMDL	0	0.2
Wheatley	25/07/77	S	R	Lake Erie	BMDL:C	0	0.5
					0.2:A	0.0-0.4	0.1
	25/07/77	S	T	Dist'n system	BMDL	0	0.2
Whitby	15/03/78	S	R	Lake Ontario	0.8:C	0.0-2.0	0.4
					0.8:A	0.0-2.0	0.4
	15/03/78	S	R	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 1: Abridged Results of Asbestos Survey

Municipality	Date Sampled	SAMPLE DESCRIPTION Surface or Ground	Raw or Treated	General/Source	ASBESTOS COUNT (10^6 fibers L^{-1}) Result[1]	Range	Detection Limit[1]
Wiarton	18/01/78	S	R	Georgian Bay	BMDL	0	0.1
	18/01/78	S	T	Pump House	BMDL	0	0.2
Winchester	31/10/78	G	R	Well #1	BMDL	0	0.2
	31/10/78	G	T	WTP	BMDL	0	0.2
	31/10/78	G	R	Well #5	BMDL	0	0.2
	31/10/78	G	T	WTP	BMDL	0	0.2
Wingham	16/02/78	G	R	Well	BMDL	0	0.2
	16/02/78	G	T	WTP	BMDL	0	0.2
Windsor	06/03/78	S	R	Detroit River	0.4:C	0.0-1.0	0.2
					0.4:A	0.0-1.0	0.2
	06/03/78	S	T	After Filter	BMDL	0	0.2
	28/05/79	S	R	Detroit River	BMDL	0	1.8
	28/05/79	S	T	After filter	BMDL	0	0.2
Woodstock	07/02/78	G	T	Dist'n	BMDL	0	0.2
	07/02/78	G	R	Well #5	3.0:C	1.0-5.0	0.2
					BMDL:A	0	0.2
	23/01/78	G	R	Well #4	0.4:C	0.0-1.0	0.1
					0.2:A	0.0-0.6	0.1
Woodville	27/02/78	G	R	Well	BMDL	0	0.4
	27/02/78	G	T	Pump House	BMDL	0	0.2
Zurich	01/03/78	G	R	Well	BMDL	0	0.4
	01/03/78	G	T	WTP	BMDL	0	0.2

1. Result or detection limit followed by :A or :C denotes Amphibole or Chrysotile fiber types. This designation only used when result or detection limit of the two fiber types are not identical. BMDL indicates Below Minimum Detection Limit.

Appendix 2: Statistical Calculations

Municipality: Coldwater
Date: 09/03/78
Estimated chrysotile fiber concentration: 40.0 MFL
Number of chrysotile fibers sized: 39
Mean chrysotile fiber length: 1.63 µm

Standard deviation of mean: 1.72 µm
Estimated amphibole fiber concentration: BMDL

Number of amphibole fibers sized: 0
Mean amphibole fiber length: -
Standard deviation of mean: -

Mean and standard deviation were calculated by:

Mean: $\overline{X} = \frac{\sum X}{n}$

Standard deviation:

$$S = \sqrt{\frac{\sum(X - \overline{X})^2}{n-1}}$$

where X = observed fiber size
$\sum$ = sum
n = sample size
$\overline{X}$ = mean
S = standard deviation of mean

1.) The 99% upper confidence limit for mean Chrysotile fiber size, using the Z transformation:

$$\begin{aligned} \text{Mean} &= \overline{X} + Z\alpha\ (S/\sqrt{n}) \\ &= 1.63 + Z_{0.01}\ (1.72/\sqrt{39}) \\ &= 1.63 + 2.33\ (0.276) \\ &= 1.63 + 0.64 \\ &= 2.27 \end{aligned}$$

where $\overline{X}$ = sample mean (calculated)
Z = Z statistic from normal dist'n tables
S = standard deviation of mean (calculated)
n = sample size
α = level of confidence = 0.01

The mean chrysotile fiber size of this sample will not exceed 2.27 µm, at the 99% level of significance.

2.) The probability of any chrysotile fiber exceeding 10 µm, assuming normal distribution:

since n >30, the sample mean $(\overline{X})$ approximates the population mean (μ) and the sample standard deviation (S) approximates the population standard deviation (σ).

$$\begin{aligned} Z &= \frac{X - \overline{X}}{S} \\ &= \frac{10 - 1.63}{1.72} \\ &= 4.86 \end{aligned}$$

$$\begin{aligned} \therefore P\ (X>10) &= P\ (Z>4.86) \\ &= 1 - P\ (Z<4.86) \\ &= 1 - (>0.9999) \\ &= \text{less than } 0.01\% \end{aligned}$$

where X = observed fiber size (10)
Z = Z statistic from normal dist'n tables
$\overline{X}$ = sample mean (calculated)
S = sample standard deviation (calculated)

The probability of any chrysotile fiber exceeding 10 µm for this sample is less than 0.01%.

Appendix 2: Statistical Calculations

Municipality: Lambeth
Date: 09/05/78
Estimated chrysotile fiber concentration: 10 MFL
Number of chrysotile fibers sized: 32
Mean chrysotile fiber length: 2.25 µm
Standard deviation of mean: 2.21 µm
Estimated amphibole fiber concentration: 0.2 MFL

Number of amphibole fibers sized: 1
Mean amphibole fiber length: 2.3 µm
Standard deviation of mean: -

Mean and standard deviation were calculated by:

Mean: $\overline{x} = \frac{\sum \chi}{n}$

Standard deviation:

$$S = \sqrt{\frac{\sum(\chi - \overline{x})^2}{n-1}}$$

where χ = observed fiber size
$\sum$ = sum
n = sample size
$\overline{X}$ = mean
s = standard deviation of mean

1.) The 99% upper confidence limit for mean Chrysotile fiber size, using the Z transformation:

$$\begin{aligned} \text{Mean} &= \overline{X} + Z\alpha\ (S/\sqrt{n}\,) \\ &= 2.25 + {}^{Z}0.01\ (2.21/\sqrt{32}) \\ &= 2.25 + 2.33\ (0.391) \\ &= 2.25 + 0.91 \\ &= 3.16 \end{aligned}$$

where $\overline{x}$ = sample mean(calculated)
Z = Z statistic from normal dist'n tables
S = standard deviation of mean (calculated)
n = sample size
α = level of confidence = 0.01

The mean chrysotile fiber size of this sample will not exceed 3.16 µm, at the 99% level of significance.

2.) The probability of any chrysotile fiber exceeding 10 µm, assuming normal distribution:

since n >30, the sample mean $\boxed{\overline{X}}$ approximates the population mean (µ) and the sample standard deviation (S) approximates the population standard deviation (σ).

$$\begin{aligned} Z &= \frac{\chi - \overline{X}}{S} \\ &= \frac{10 - 2.25}{2.21} \\ &= 3.51 \\ \therefore P\ (\chi > 10) &= P\ (Z > 3.51) \\ &= 1 - P\ (Z < 3.51) \\ &= 1 - (>0.9999) \\ &= \text{less than } 0.01\% \end{aligned}$$

where χ = observed fiber size (10)
Z = Z statistic from normal dist'n tables
$\overline{X}$ = sample mean (calculated)
S = sample standard deviation (calculated)

The probability of any chrysotile fiber exceeding 10 µm for this sample is less than 0.01%.

Appendix 2: Statistical Calculations

Municipality: Mactier
Date: 05/02/80
Estimated chrysotile fiber concentration: 35 MFL
Number of chrysotile fibers sized: 40
Mean chrysotile fiber length: 1.23 µm
Standard deviation of mean: 1.03 µm
Estimated amphibole fiber concentration: 0.4 MFL

Number of amphibole fibers sized: 1
Mean amphibole fiber length: 1.50 µm
Standard deviation of mean: -

Mean and standard deviation were calculated by:

Mean: $\overline{x} = \dfrac{\sum \chi}{n}$

Standard deviation:

$$S = \sqrt{\frac{\sum(\chi - \overline{x})^2}{n-1}}$$

where χ = observed fiber size
$\sum$ = sum
n = sample size
$\overline{X}$ = mean
s = standard deviation of mean

1.) The 99% upper confidence limit for mean Chrysotile fiber size, using the Z transformation:

$$\begin{aligned} \text{Mean} &= \overline{X} + Z\alpha\ (S/\sqrt{n}\,) \\ &= 1.23 + Z_{0.01}\ (1.03/\sqrt{40}) \\ &= 1.23 + 2.33\ (0.164) \\ &= 1.23 + 0.38 \\ &= 1.61 \end{aligned}$$

where $\overline{x}$ = sample mean (calculated)
Z = Z statistic from normal dist'n tables
S = standard deviation of mean (calculated)
n = sample size
α = level of confidence = 0.01

The mean chrysotile fiber size of this sample will not exceed 1.61 µm, at the 99% level of significance.

2.) The probability of any chrysotile fiber exceeding 10 µm, assuming normal distribution:

since n >30, the sample mean $(\overline{X})$ approximates the population mean (µ) and the sample standard deviation (S) approximates the population standard deviation (σ).

$$\begin{aligned} Z &= \frac{\chi - \overline{X}}{S} \\ &= \frac{10 - 1.23}{1.03} \\ &= 8.48 \end{aligned}$$

$$\begin{aligned} \therefore P\ (\chi > 10) &= P\ (Z > 8.48) \\ &= 1 - P\ (Z < 8.48) \\ &= 1 - (>0.9999) \\ &= \text{less than } 0.01\% \end{aligned}$$

where χ = observed fiber size (10)
Z = Z statistic from normal dist'n tables
$\overline{X}$ = sample mean (calculated)
S = sample standard deviation (calculated)

The probability of any chrysotile fiber exceeding 10 µm for this sample is less than 0.01%.

Appendix 2: Statistical Calculations

Municipality: Mactier
Date: 24/05/79
Estimated chrysotile fiber concentration: 340 MFL
Number of chrysotile fibers sized: 46
Mean chrysotile fiber length: 1.05 µm
Standard deviation of mean: 0.68 µm

Estimated amphibole fiber concentration: 2.0 MFL

Number of amphibole fibers sized: 1
Mean amphibole fiber length: 1.75 µm
Standard deviation of mean: -

Mean and standard deviation were calculated by:

Mean: $\bar{x} = \dfrac{\sum \chi}{n}$

Standard deviation:

$$S = \sqrt{\frac{\sum(\chi - \bar{x})^2}{n-1}}$$

where χ = observed fiber size
$\sum$ = sum
n = sample size
$\bar{X}$ = mean
s = standard deviation of mean

1.) The 99% upper confidence limit for mean Chrysotile fiber size, using the Z transformation:

$$\begin{aligned} \text{Mean} &= \overline{X} + Z\alpha\,(S/\sqrt{n}\,) \\ &= 1.05 + Z_{0.01}\,(0.68/\sqrt{46}) \\ &= 1.05 + 2.33\,(0.256) \\ &= 1.05 + 0.60 \\ &= 1.65 \end{aligned}$$

where $\overline{x}$ = sample mean (calculated)
Z = Z statistic from normal dist'n tables
S = standard deviation of mean (calculated)
n = sample size
α = level of confidence = 0.01

The mean chrysotile fiber size of this sample will not exceed 1.65 µm, at the 99% level of significance.

2.) The probability of any chrysotile fiber exceeding 10 µm, assuming normal distribution:

since n >30, the sample mean $(\overline{X})$ approximates the population mean (µ) and the sample standard deviation (S) approximates the population standard deviation (σ).

$$\begin{aligned} Z &= \frac{\chi - \overline{X}}{S} \\ &= \frac{10 - 1.05}{0.68} \\ &= 13.26 \\ \therefore P(\chi > 10) &= P(Z > 13.26) \\ &= 1 - P(Z < 13.26) \\ &= 1 - (>0.9999) \\ &= \text{less than } 0.01\% \end{aligned}$$

where χ = observed fiber size (10)
Z = Z statistic from normal dist'n tables
$\overline{X}$ = mean (calculated)
S = standard deviation (calculated)

The probability of any chrysotile fiber exceeding 10 µm for this sample is less than 0.01%.

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